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DATA SET STANDARDIZATION HANDBOOK

U.S. Department of the Interior
Bureau of Land Management
Washington Office

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Introduction

In this *Data Set Standardization Handbook*, the Bureau of Land Management presents its procedures for developing, approving, implementing, and revising (1) the data sets it plans to computerize bureauwide to help it more successfully carry out its mission and (2) the standards for the data--the rules by which data will be described and recorded.

To the user, much of the material in this *Handbook* may be new and at first staggering. The procedures documented are complicated, involving a vast array of new terms and roles and responsibilities within the Bureau. Because of the complexity of its material, this *Handbook* is not a document to be read once and put aside, but a reference to be studied and referred to when needed. It leads users through the maze of procedures, informing them of what tasks need to be done by whom, how best to do them, and in what order they need to be done. The flowchart in Figure 1 is a reference guide to the standardization process.

The first three chapters of this *Handbook* briefly introduce data standardization. Chapter 1 presents the objectives of the *Handbook*. Chapter 2 defines roles and responsibilities of the key players in the data set standardization process. And Chapter 3 defines data standardization and information system terms that the reader may not know.

Chapter 4, Development of Data Elements and Standards for Data Sets, presents the meat of the *Handbook*. It discusses the team's review of existing information from the data element dictionary, LIS Data Dictionary, other automated systems, and other agency data. It also discusses developing a recommendation on which process the team should use; the data inventory (if needed); and evaluating inventory findings, recommending data standards and codes, and preparing data set reports. Chapter 4 particularly emphasizes the data set team--the basic work unit in developing data elements and standards -- describing how teams should be set up, who to select as members, when the team meets, and what the team does.

Chapters 5-8 discuss the later stages of the data set standardization process. Chapter 5 explains the review and approval of the draft data set reports, including who ensures that reports are adequately reviewed, what reviewers should seek in their reviews, and how review comments should be handled. Chapter 6 briefly describes data modeling and the relationship to the data standardization effort. Chapter 7 deals with how spatial and cartographic elements and standards will be developed. Chapter 8 explains how the data elements, standards, and codes will be implemented. And Chapter 9 explains the process for changing data elements and standards.

The appendices present material to help those involved in the data set standardization process. Appendix 1 defines the Data Classification Structure. Appendix 2 describes how to access and use the current data element dictionary. Appendix 3 provides direction on inventorying data sets. Appendix 4 explains how to use the dBase III+ data standards program. Appendix 5 describes the data entry worksheet and how to fill it out.

If you have questions concerning the data set standardization process follow this procedure:

Questions on the General Process

Data Set Team Leader to State Office Data Administrator (SODA)
SODA to the Lead Assistant Director's Data Administrator (ADDA)
ADDA to the Bureau Data Administrator (BDA)

Questions regarding the Data Element Dictionary

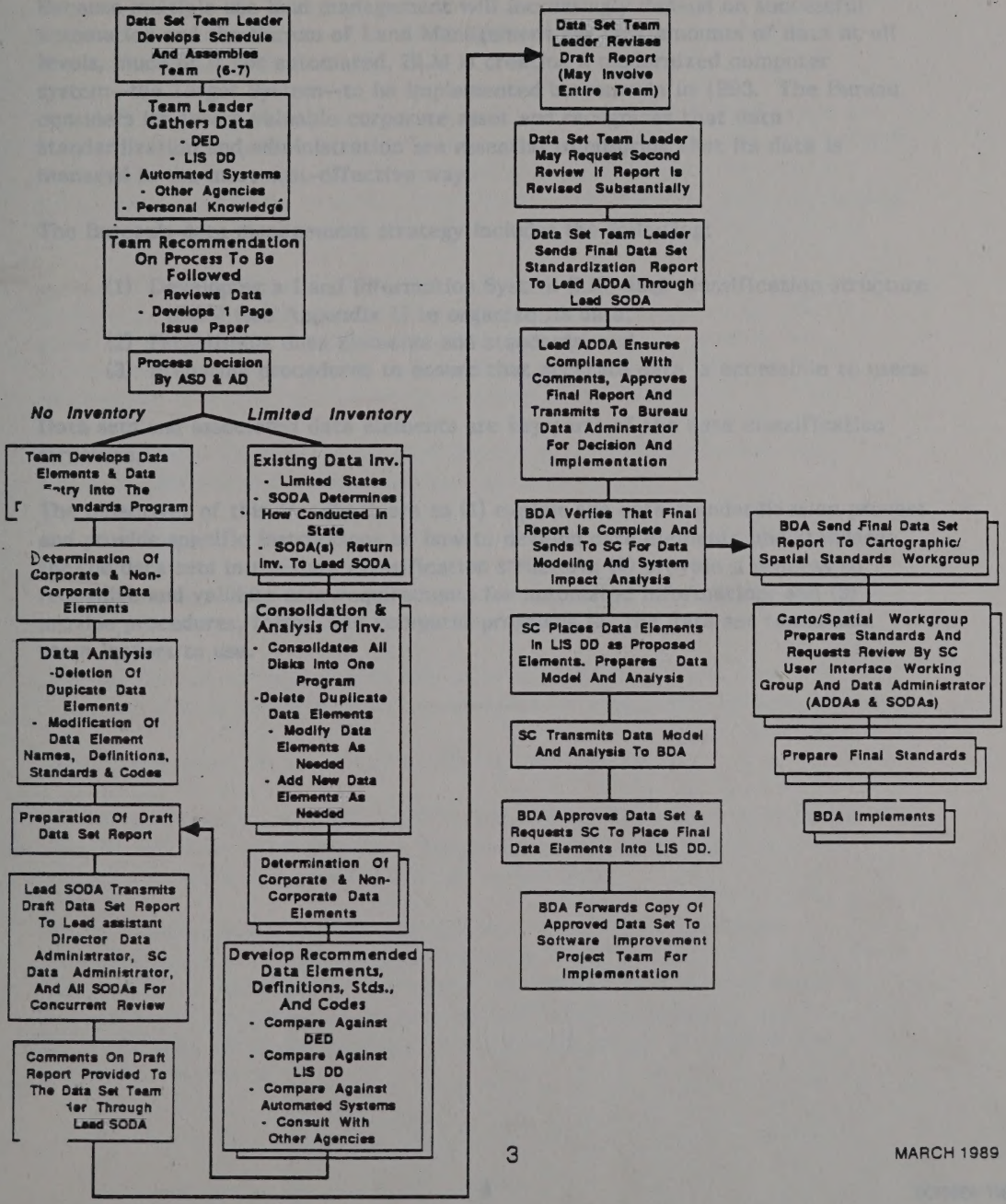
Data Set Team Leader to SODA
SODA to Tom Costello (FTS 776-0144, Com 303-236-0144) at the Service Center

Questions on the Dbase III Data Standards Program

Inventory Participants to their SODA
SODA to Bureau Data Administrator (BDA)
BDA to Robin Stoebe (programer)

Figure 1.

Flowchart Of Data Set Standardization Process


Data Set Team Leader Develops Schedule And Assembles Team (5-7)
Team Leader Gathers Data
- DED
- LIS DD
- Automated Systems
- Other Agencies
- Personal Knowledge
Team Recommendation On Process To Be Followed
- Reviews Data
- Develops 1 Page Issue Paper
Process Decision By ASD & AD
No Inventory
Limited Inventory
Team Develops Data Elements & Data Entry Into The Standards Program
Existing Data Inv.
- Limited States
- SODA Determines How Conducted In State
- SODA(s) Return Inv. To Lead SODA
Determination Of Corporate & Non-Corporate Data Elements
Consolidation & Analysis Of Inv.
- Consolidates All Disks Into One Program
-Delete Duplicate Data Elements
- Modify Data Elements As Needed
- Add New Data Elements As Needed
Data Analysis
-Deletion Of Duplicate Data Elements
- Modification Of Data Element Names, Definitions, Standards & Codes
Preparation Of Draft Data Set Report
Determination Of Corporate & Non-Corporate Data Elements
Lead SODA Transmits Draft Data Set Report To Lead assistant Director Data Administrator, SC Data Administrator, And All SODAs For Concurrent Review
Develop Recommended Data Elements, Definitions, Stds., And Codes
- Compare Against DED
- Compare Against LIS DD
- Compare Against Automated Systems
- Consult With Other Agencies
Comments On Draft Report Provided To The Data Set Team Leader Through Lead SODA
Data Set Team Leader Revises Draft Report (May Involve Entire Team)
Data Set Team Leader May Request Second Review If Report Is Revised Substantially
Data Set Team Leader Sends Final Data Set Standardization Report To Lead ADDA Through Lead SODA
Lead ADDA Ensures Compliance With Comments, Approves Final Report And Transmits To Bureau Data Adminstrator For Decision And Implementation
BDA Verifies That Final Report Is Complete And Sends To SC For Data Modeling And System Impact Analysis
BDA Send Final Data Set Report To Cartographic/ Spatial Standards Workgroup
SC Places Data Elements In LIS DD as Proposed Elements. Prepares Data Model And Analysis
Carto/Spatial Workgroup Prepares Standards And Requests Review By SC User Interface Working Group And Data Administrator (ADDAs & SODAs)
SC Transmits Data Model And Analysis To BDA
Prepare Final Standards
BDA Approves Data Set & Requests SC To Place Final Data Elements Into LIS DD.
BDA Implements
BDA Forwards Copy Of Approved Data Set To Software Improvement Project Team For Implementation

Chapter 1
Objectives

Because multiple use land management will increasingly depend on successful automation and the Bureau of Land Management has vast amounts of data at all levels, much of it not automated, BLM is creating a modernized computer system--the Target System--to be implemented bureauwide in 1993. The Bureau considers its data a valuable corporate asset and recognizes that data standardization and administration are essential to ensuring that its data is managed in the most cost-effective way.

The Bureau's data management strategy includes the following:

(1) Developing a Land Information System (LIS) data classification structure (DCS) (see Appendix 1) to organize its data,
(2) Establishing data elements and standards, and
(3) Preparing procedures to ensure that accurate data is accessible to users.

Data sets and associated data elements are key parts of the data classification structure.

The objectives of this *Handbook* are to (1) explain the data standardization process and provide specific instructions on how to develop data elements and standards for the data sets in the data classification structure; (2) provide a process to recognize and validate user requirements for automated information; and (3) provide procedures, forms, and computer programs for the data set teams and team leaders to use.

Chapter 2
Roles and Responsibilities

This chapter lists the roles and responsibilities involved in the data element and standards development process outlined in this *Handbook* but does not address other roles of the positions.

Assistant Director's Data Administrator (ADDA) - Coordinates development and implementation of corporate data elements and standards within the responsibility of its Assistant Director. Reviews and evaluates proposed data elements and standards before passing them on to the Bureau Data Administrator as acceptable from the perspective of the Assistant Director's programs.

Bureau Data Administrator (BDA) - Directs development and implementation of the Land Information System data classification structure, makes decisions on design of the data element identification and standardization process, and approves the selected corporate data elements and standards. Ensures the development of a new Land Information System data dictionary.

Data Set Team - Conducts the data inventory, proposes data elements and standards, and prepares a report for each assigned data set.

Data Set Team Leader - Forms and leads a data set team to develop corporate data elements, standards, and codes. Distributes source documents and other information describing data in use or proposed for automation, such as the data element dictionary and data flow diagrams.

Division of Information Resource Management **(WO-770)** - Makes final determinations on access security requirements for each identified data element.

Field Committee - Oversees BLM's data administration effort.

Lead State Director - Requests participation of individuals from other states on the data set team and ensures that the data set team leader and state team members complete their assignments within deadlines.

Service Center Data Administrator (SCDA) - Assists the Bureau Data Administrator in establishing and administering the BLM Land Information System data dictionary, including the oversight of the current data element dictionary management (1) to evaluate data element modifications, deletions, and documentation; (2) to distribute source documents; and (3) to assist in data evaluations as needed.

Service Center Data Base Administrator - This position does not now exist with this title, but someone will be designated as responsible for maintaining the BLM Land Information System data dictionary and for preparing the system data dictionary and the current applications data element dictionary.

State Office Data Administrator (SODA) - Coordinates a state's selection of corporate data elements and standards for the data classification structure and BLM Land Information System data dictionary. SODAs (1) act as lead contacts in their states for conducting data inventories when requested by other state data set team leaders, (2) initiate data inventories within their states and ensure completion of inventories to meet deadlines, (3) establish procedures for review and comment on the work of data set teams from their state's perspective, (4) train and facilitate the work of data set team leaders and inventory participants within their states, and (5) distribute source documents and other information describing such current and proposed data elements or requirements as the data element dictionary and data flow diagrams.

Washington Office Data Set Team Member - Provides program input to the data set team and ensures that Bureau corporate data standards consider program policy and direction. The WO team member also serves as the subject matter specialist for each data set assignment.

Chapter 3
Definitions

ADDA - Assistant Director's Data Administrator

Alias - A different name for a data element with the same definition, standards, and codes

ALMRS - Automated Land and Minerals Records System

Alpha List - Computer list of data elements in alphabetical order.

Application -In the current data element dictionary (DED), an application represents the total data for an activity. Also refers to a computer program, written or purchased, for performing BLM program-specific function or tasks.

ARD - Automated Resources Data

Attribute - A characteristic or piece of information about a data element, i.e., attributes of "tree" are age, height, diameter, etc. An attribute of a data element can also be who added it to the dictionary, how many times it was modified, and the definition. Therefore the definition is also an attribute.

BDA - Bureau Data Administrator

BLM - Bureau of Land Management

Bureau - Bureau of Land Management

Corporate Data - The individual pieces of information (alphanumeric or symbolic) needed bureauwide for BLM to carry out its mission. Corporate data is standardized bureauwide and is to be shared and combined by offices, usually through automation.

Data - A formal representation of facts, concepts, or instructions suitable for communication, interpretation, or processing by humans or automatic means; any representation such as characters or analog amounts to which meaning is, or might be, assigned.

DA (Data Administrator) - The person in a BLM office who acts as the focal point for managing and operating the office's standardized data.

Data Element (DE) - A collection of data (characters) that describes an item of information at or near its basic level--the level at which it cannot be further subdivided. A data element may be thought of as a pigeon hole for storing collected data. A data element is not data. A data element can only contain one type and piece of information, it cannot contain multiple pieces of information. An elementary item, e.g., (month), has no subordinate elements. A group item, e.g., (date) may consist of day, month, and year subcomponents and still be a single data element. A data element may consist of a specific value that can be numeric, alphabetic, or a combination of both. Data elements may also be tied to spatial attributes, as in HERD LOCATION.

Data Element Codes - At times when the data being recorded can not be recorded directly, codes are necessary to record the data. Codes should be as meaningful as possible and semantic when ever possible. Codes should be as user friendly as possible (using numbers only as a last resort). For example, in coding types of plans the codes should be RMP, ACT, PROJ, etc instead of 1 = RMP, 2 = ACT, 3 = PROJ, etc.

Data Element Definition - The description of the type of data the data element will contain. Needs to be described in plain english and be understandable to a non-technical person.

Data Element Standards - The rules by which data is recorded (limits, ranges, precision, units of measure). For example: month must be numeric and range between 01 and 12; record the miles to the nearest tenth; use english not metric units; the date of the notice is to be the date it appears in the Federal Register.

Data Element Number - A unique number assigned to each data element in the data element dictionary (DED).

Data Classification Structure (DCS) - A formal representation of the ordering and accessibility relationships among the Bureau of Land Management's corporate data without regard to physical storage of the data.

Data Set - A combination of related data elements on a particular subject. The data set contains data elements most specific to the subject of the data set. A data set is a further breakdown into logical groupings of an information category. The data set concept was developed to organize BLM's data for standardization.

Data Subset - A combination of information related to a smaller and finer breakdown of a data set. Data subsets are used only if needed to organize data elements within data sets.

Data Set Inventory - A step in the data standardization process in which

information used by BLM relating to a data set is identified.

Data Set Team - A team led by a data set team leader and consisting of a Washington Office program lead, representatives from more than one state, and, if possible, a Service Center resource specialist for the subject area. A data set team may also include a Forest Service resource specialist. Responsible for standardizing the data for a particular subject, the data set team analyzes existing information and generates data elements, definitions, standards, and codes, for the data set.

Data Set Team Leader (DSTL) - Person in charge of a data set team.

Data Set Report - A report describing the efforts and results of the work of a data set team in standardizing each data set, including the recommended corporate data elements, definitions, standards, and codes.

dBaseIII Plus (dB3+) - A data base software program.

DED (Data Element Dictionary) - The repository for all definitive information about data elements, including their use, meanings, sources, characteristics, relationships, and authorities (law, regulation, or manual that authorizes their use). The data element dictionary is subdivided by applications (uses).

Field Committee (FC) - The associate state directors and comparable Headquarters and Service Center representatives.

Geographic Coordinate Data Base (GCDB) - A data base containing digitized (computerized) geographic coordinates for corners and points of the Public Land Survey System. The GCDB is designed to provide graphic portrayal and automated mapping of the land net.

Information Subcategory - A breakdown of an information category of data used in meeting mission requirements. A subcategory is used only if the information category must be broken into logical and more manageable segments to organize the development of data sets.

IRM - Information Resource Management

Lead DA - Lead Data Administrator, lead refers to the role of the data administrator working with the data set team leader for a particular data set standardization effort.

Lead SODA - Lead State Office Data Administrator. See lead data administrator.

LIS - Land Information System

LIS Data Dictionary - BLM's new data dictionary, which contains data elements, definitions, and standards for Bureau corporate data related to the Geographic Coordinate Data Base, resources, and the basic building blocks of BLM's Automated Land and Minerals Records System (ALMRS): legal land description, status, Alaska ALMRS, case recordation, and mining claim recordation.

Naming Convention (or Standard) - A convention is a rule or algorithm that, when applied to a body of data, produces a standard result.

Noncorporate Data (previously termed discretionary data) - Data that need not be standardized bureauwide but may be standardized on a state, district, or area basis.

Program - A BLM term tied to budget subactivity.

SCDA - Service Center Data Administrator

SODA - State Office Data Administrator

Standards - The rules by which data is described and recorded. For example, a standard for recording months of the year might be that months must be numeric and range from 01 to 12.

System - A collection of people, machines, information, methods, and individual roles and responsibilities organized to accomplish a set of specific functions.

Chapter 4
Development of Data Elements and Standards for Data Set

Introduction

This chapter deals with the process used in generating data elements, definitions, standards, and codes for each data set. The chapter is divided into three parts: general procedures, procedures for use when an inventory is not conducted, and procedures for use when a limited inventory is conducted.

Part 1
General Procedures

Schedule Development and Team Formation

For each team assignment (one assignment may include more than one data set) the data set team leader will prepare a schedule of timeframes and completion dates for all major steps of the standardization process.

The data set team leader also has the responsibility of forming a team to develop the data elements, definitions, standards, and codes for each assigned data set. The team will consist of specialists within the subject area from the following organizations:

(1) Washington Office program staffs (one per data set team),
(2) More than one state (with consideration given to states heavily involved in the program area), and
(3) The Service Center if it can provide expertise in the program area (one per data set team).

A suggested target size for the team is six to eight members in addition to the team leader. The following criteria should be considered in selecting team members:

(1) Expertise or working knowledge in the data set subject area.
(2) Desire to participate in setting standards for the Bureau's Land Information System.
(3) Interest in automating the Bureau's resource data.

The data set team leader may wish to confer with the state office data administrator (SODA) and the Washington program office in selecting team members.

The Forest Service will be invited to participate on each of the data set teams. The Bureau Data Administrator (BDA) will coordinate with the Washington Office of the Forest Service to select a member for each team on which the Forest Service wishes to be represented. The BDA will give the name of each Forest Service member to the lead assistant director's data administrator (ADDA), who will pass it on to the team leader.

Once the data set team leader has selected potential team members, the state office data administrator (SODA) for the lead state will coordinate with the other SODAs and lead assistant director's data administrator (ADDA) to confirm that potential members can participate. SODAs will then check with supervisors to get supervisory permission for potential members to serve on the team and confirm this permission with the lead SODA.

The state director from the lead state (or Service Center Director or Assistant Director, depending upon where the data set team leader works,) will formally request participation of the selected team members on the data set team. (See Illustration 1.) The requesting memorandum should include the expected timeframe of the task and the deadline for its completion. The memo should also state that the team member's office will pay all expenses of the member's participation and request that the assigned team member call the data set team leader to confirm participation.

Upon receiving participation confirmation, the data set team leader will send a welcoming memo (See Illustration 2) and a copy of this *Handbook*. The memo will include a schedule; team member names, offices, and phone numbers; the purpose of the task; and the priority of the work. This memo will also discuss the first task--the analysis of existing data to prepare a recommendation on the process to be used by the team--and establish procedures and a timeframe for completing this task.

Development of Team Recommendation

The purpose of this step is to determine how the team should proceed with developing standards for the assigned data set(s). Two choices are possible:

(1) Team proceeds on its own using existing data, or
(2) Team requires a limited inventory to provide enough data to generate data elements, definitions, standards, and codes.

The first step is for the data set team leader to gather existing information on the data set subject. During the interim period, there will be two dictionaries: (1) the current applications data element dictionary and (2) a new Land Information System (LIS) data dictionary, which will be compiled as data sets are completed within the LIS data standardization process. The Service Center will maintain both dictionaries.

The purpose of gathering the information is to determine the number and type of data elements, standards, and codes already existing for the subject area. Sources are

(1) Existing data element dictionary (DED),
(2) Other Bureau automated systems,
(3) LIS data dictionary, and
(4) Other agencies.

The data set team leader will obtain a copy of the key word index (an alphabetical listing of all data elements) from the current data element dictionary and the LIS data dictionary. See Appendix 2 on how to access and use the current data element dictionary. Methods to access the LIS data dictionary from field offices have not yet been established.

Team leaders may obtain information about data elements from the current data element dictionary in three ways.

(1) Using the selection access to the data element dictionary (DED) team leaders may view the complete definitions and standards for each data element and have them printed out.
(2) Because data elements are grouped by applications in the current DED applications can be printed out for team leader use. About 300 applications and associated data elements now exist. (See data element 8850, illustration 3 for example of application index.)
(3) A special application may be devised to include all data elements required by a particular team.

For some data sets, data elements that the team must review will occur throughout many applications and require time to pull the needed information on each one. A special application would facilitate the team's review of data elements.

To develop a special application, the team leader will need to provide a list of data elements to be placed in the special application. This list may be developed by using the key work index or existing application index(s). To develop the special application, the team leader needs to contact the Service Center Division of Data Management (SC 320) (Mike Thompson, FTS 776-9935) through the lead SODA.

The Service Center Division of Data Management can also provide help on the data element dictionary or the lists from the LIS data dictionary and provide such other useful information as data flow diagrams and completed data models. The team leader may seek help from the state office data administrator (SODA) and the team should also canvass other SODAs and the lead assistant director's data administrator (ADDA) for this information.

The team leader also gathers information from other BLM automated systems, as well as from other agencies. The team leader should call state and other federal agencies for input to the standardization process where (1) BLM supplies data to another agency, (2) BLM uses or would like to use another agency's data, or (3) BLM coordinates with the agency and the agency uses the same type of data. Some potential federal agencies to be called are the Forest Service, Fish and Wildlife Service, Soil Conservation Service, National Park Service, Bureau of Indian Affairs, Army Corps of Engineers, Bureau of Reclamation, and the Environmental Protection Agency.

After the data has been gathered, the team meets to determine if it has enough information to conduct the data standardization effort. The team reviews the material, but does not analyze it to start developing data elements, definitions, standards, or codes. The team is not concerned with duplicate data elements, unclear or incomplete definitions, improper or incomplete standards or codes. Rather the team seeks to determine if existing material covers the subject data sets well enough so that an inventory is not needed.

If not enough information exists for the team to make a recommendation the review may be conducted by a conference call. Based on this review the data set team leader develops a one-page issue paper with a recommendation on how to proceed. The data set team leader, lead SODA, and the lead ADDA need to closely coordinate during the review and formulation of the team's recommendation so that a quick decision may be reached. The recommendation will either be

(1) Enough data exists for the team to develop data elements, standards, and codes for its assigned data set(s), or
(2) Not enough information exists and a limited inventory will be needed.

If the recommendation is for a limited inventory the issue paper will need to list the states to be inventoried and explain why the selected states were chosen. In determining which states should be inventoried, states heavily involved in the program area of the data set(s) should be considered as well as those not represented by team members.

Process Decision

The team's recommendation is sent to the lead SODA, who coordinates the decision process. The decision on the recommendation is made by the lead Associate State Director and the lead Assistant Director. This decision needs to be made quickly so that the team can proceed with its work of developing data elements, standards, and codes, or begin the inventory without team members having to return to their offices.

Part 2
Developing Data Standards Without Inventory

Development of Data Elements and Data Entry

The purpose of this step is to compile for the data set(s) a comprehensive list of data elements to describe the information needed for BLMs management. Using information gathered from the DED, other automated systems, other agencies, and personal knowledge, the team compiles data elements for the assigned data set(s). All possible data elements should be listed without concern for duplicative data elements, data elements with similar definitions that could be combined, or data elements with the same name but different definitions, standards, or codes. The analysis process, which follows this step, eliminates duplicates and generates unique definitions, standards, and codes.

The information generated in this step will be entered into the Data Standards program, using dBase III software (see Appendix 4). The key part of this step is that all the information for each data element has to be entered. (See Appendix 5 for instructions on using the data entry worksheet.) The data for each data element may be placed on the data entry worksheet for entry or it may be entered directly into the program, depending on how the team is organized and wishes to work. Where there's not enough space on the program, e.g., codes, a hard copy of this information has to be included in the data set report. If spatial (graphics) standards exist for any of the data elements, these standards also have to be provided in hard copy.

Data Analysis

With a complete printout report for each data set, sorted by data element name, the team begins its analysis performing the following tasks for each data set:

(1) eliminate duplicate data elements,
(2) refines data elements that appear to be the same or compatible by preparing consistent data element names, definitions, and standards for elements with the same type of data, and
(3) adds new data elements, definitions, standards, and codes as needed.
(4) groups data elements with spatial characteristics into logical "themes".

The analysis involves reviewing the definition and standards for each duplicate data element name to ensure that apparent duplicates are actually duplicates. If the definition and standards differ, then the data elements are not true duplicates. For example, one data element for a species of a plant may be named, "Plant Name," whereas another data element may contain the same data but be named "Vegetation Name." The team may decide that these two data elements are the same and determine the most suitable name. If no standards exist, the team must prepare them.

The team should carefully make these types of changes to prevent the loss of different data needs. Where meanings are unclear, the team needs to confer and determine exactly what type of data the data element was meant to represent. Data elements That are true duplicates are deleted. Upon completing its first analysis, the team updates the data standards program with the revised data, deleting data elements and revising data element names, definitions, and standards.

During the analysis process the team maintains a list of data elements by name, number (if it exists), and source (i.e., system where located), which will be replaced by the data elements, definitions, standards, and codes formulated during the analysis process. This listing is included as part of the data set report.

The data set team runs a second report and repeats the process until satisfied that all duplications have been eliminated and the report accurately represents the data being collected and needed by Bureau field offices.

Determining Corporate and Noncorporate Data

After compiling a list of data elements, the team determines in which data category (corporate or noncorporate [formerly called discretionary]) each data element should be placed. Corporate data will be standardized bureauwide. Noncorporate data will not be standardized bureauwide but may be standardized on a state, district, or area basis. The data set team then sorts the data into corporate and noncorporate types and runs a report for each type (see Appendix 4 for instructions on operating the Data Standards program).

BLM's corporate data is that needed throughout the Bureau--data that must be shared or combined among offices, usually through the computer. Corporate data is to be standardized (1) to ensure common understandings and meanings throughout the Bureau and (2) to allow data to be easily combined and quickly transmitted between offices. Standards allow data sharing and exchange among agencies. Standard terms, definitions, codes, and units of measure permit the use of relational data base management, which is planned for the Interim and Target Systems. Without standardization, BLM's corporate data cannot be computerized.

The data set team will use the following criteria to determine corporate data (a data element need meet only one criterion to be considered corporate):

(1) The data element is needed in or supplies input to a Washington Office required report.
(2) The data element is shared among states or with the Washington Office.
(3) More than one state is gathering and using the same data, even if it is not shared among States. If same data is being gathered, it should be

standardized even if it is not computerized.

(4) The data element provides data needed to respond to many questions at the field or Washington office level.

(5) The data element is subordinate information needed to obtain required information. For example, in the formula **pay - taxes - insurance = net pay, net pay** is the required information, and pay, taxes, and insurance constitute subordinate information needed to calculate net pay.

(6) The data element is needed to document legal transactions required to support the Bureau's mission.

The team then updates the data standards program with its decisions on the data categories and, after the program has been updated, runs a list of corporate data elements and their characteristics. The team leader sends a copy of this draft list, through their SODA, to the lead assistant director's data administrator, who sends copies to other data set teams to reduce the chance of different teams working on the same data elements at the same time. The other team leaders review these lists and, if needed, call the originating team leader to negotiate which team will take the lead on a particular data element.

Developing Recommended Data Standards

The purpose of this step is to compile for the data set a comprehensive list of corporate data elements to describe the information needed for BLM's management. Although involving only the data elements on the final corporate list, generating recommended definitions, data standards, and codes is the most critical step in the data standardization process. The analysis in this step requires determining if standards already exist for each data element in the data sets being developed. If standards already exist, the team must decide either to adopt existing standards or propose new ones. If standards do not exist, then the team must generate them.

The complex and lengthy process of compiling definitions, standards, and codes for the identified data elements on the corporate list involves the following steps:

(1) Comparing proposed data elements with the new ~~Land Information System~~ 2006 data dictionary.

(2) Comparing proposed data elements with the current (old) data element dictionary.

(3) Comparing proposed data elements with other Bureau stand-alone automated systems (such as Recreation Management Information System).

(4) Comparing and coordinating proposed data elements with automated systems and standards of other agencies, particularly resource managing agencies.

(5) Considering definitions, standards, and codes submitted by team members

The first step in the comparison process is to check all the data elements on the corporate list against the BLM data element dictionaries. During the interim period, two dictionaries will be in use: (1) the current applications data element dictionary and (2) a new Land Information System (LIS) data dictionary, which will be compiled as data sets are completed within the LIS data standardization process. The Service Center will maintain both dictionaries.

The team first compares the corporate list to the LIS data dictionary, if such a dictionary exists at the time. (Note: The Service Center is already developing an LIS data dictionary for lands and minerals data.) In making the comparison, the team should look for data elements with the same name as the element being compared or with similar names that mean the same thing. As in developing the data element lists, the team may find that several data element names describe the same data. If a match (same data element name, definition, standard, and code) is found in the LIS data dictionary, further search and work are not needed. The team just needs to note in the corporate list that the data element is already included in the LIS data dictionary.

If a data element on the corporate list cannot be matched with the Land Information System data dictionary, then the old data element dictionary should be reviewed for matches.

For each matching data element, the team should thoroughly review the definitions, standards, and codes in the old data element dictionary. Many of the old data elements, definitions, standards, and codes have never been used and may be outdated. The review should determine if the previous data elements, definitions, standards, and codes are still suitable for the way the data element is being used or being proposed for future use.

One of two decisions may result from this review:

(1) The data element definition, standards, and codes in the old data element dictionary are adequate and should be placed in the LIS data dictionary, or

(2) The data element definition, standards, and codes in the old data element dictionary are not adequate and need to be revised before being placed in the LIS data dictionary.

If the old data element definition, standards, and codes are inadequate, then the team prepares a new definition and list of standards to be used to record the data and possibly a new data element name. But the team must first conduct more analyses.

The team must review other automated systems for data elements related to the subject matter of the data sets. If other systems have definitions, standards, and codes for proposed data elements, the team must review these, adopting suitable ones and improving those that are not fully suitable. The team then uses the results of the analysis of other Bureau automated systems in the final analysis process of developing definitions, standards, and codes for the data elements they are working with.

Note that during the analysis process the team has to maintain a list of data elements by name, number if one exists, and source (i.e., system where located), which will be replaced by the data elements, definitions, standards and codes developed during the analysis process. This listing is included as part of the data set report.

In setting definitions and standards for BLM data elements, the data set team must consider definitions and standards used or needed by other agencies. Particular attention must be given to incorporating and using standards that are proposed for or have become Federal Information Publication Standards (FIPS) by other agencies. These standards are generated and reviewed by other agencies with an intent to exchange information.

The final step of the process is to generate definitions, standards and codes for the data elements on the corporate data list. The team should determine in advance whether it can develop definitions and standards independently or if it needs Service Center help. If the team needs help, the team leader should arrange with the lead state office data administrator to have a Service Center specialist join the team.

For data elements whose definitions and standards have been compiled elsewhere (data element dictionary, other automated systems, other agencies), the team must decide Which to adopt. For data elements that have no definitions or standards, the team must generate them, including a data element name, definition, standards, and codes.

The following rules are to used in compiling definitions:

(1) The definition of the data element being defined should not contain the name of the element itself.

(2) The definition should describe the meaning and purpose of the data being defined and should not contain physical characteristics related to the existing data processing system.

The product of the analysis will be a data element name, a listing of all possible aliases, a definition, standards, and codes for each data element on the corporate list. The definition and list of standards and codes will be either taken from the old data element dictionary or the LIS data dictionary, or consist of new ones, revised from an existing data element or prepared by the team.

Preparing Data Set Reports

A separate report is required for each data set. Required elements of data set reports include the following:

(1) Letter of Transmittal to the lead assistant director's data administrator.
(2) Table of Contents of the data set report.
(3) Team Membership List, including office of each member.
(4) Recommendation Issue Paper on the process to be followed by the team.
(5) Consultation and Coordination (persons and agencies who participated in the standard development process and the roles they played).
(6) Corporate Data report (with attachments as needed) showing proposed corporate data elements and their basic characteristics (ie., items 1 thru 14 from the data entry worksheet).
(7) Definitions/Standards/Codes report from the dBase program (with attachments as needed).
(8) List of Data Elements with spatial characteristics, grouped by logical "themes".
(9) Findings of Comparison between Proposed Corporate Data Elements and Data Elements currently within the data element dictionary, and other Bureau automated systems (for each data element on the corporate list, where appropriate, a list of data elements by name, number if it exists, and source (i.e., system where located), which will be replaced by the data element, definition, standards, and codes developed by the team during the analysis process.
(10) Non-Corporate Data Report showing data elements not proposed for standardization and their basic characteristics.
(11) Data Disk(s) containing all data elements, corporate and noncorporate (Data.dbf).

The final report will require an additional section in which the team leader discusses problems, areas of conflict (major disagreements between states), and success of the process, and makes suggestions for improvement. The major purpose of this section is to alert the lead ADDA to problem areas and unresolved conflicts that they need to be aware of before recommending approval of the data elements and standards.

Part 3
Development of Data Standards With Limited Inventory

Limited Data Inventory

For some data set assignments, a lack of data from the DED, other Bureau automated systems, and other agencies results in the need to conduct a limited inventory before beginning the data standardization process. The purpose of the inventory is to collect information within the subject area of the data set(s) on the data now being used by the Bureau. The inventory should include pertinent data from maps, official case files, computer programs, forms, reports, data element dictionaries, or plans required to manage the public land resources.

The inventory process must represent all data collected or used by BLM. The following are suggested methods for conducting the inventory:

(1) Distribute the inventory forms (data entry worksheet from Appendix 5) to each district office program lead for completion,
(2) Distribute the inventory forms to key knowledgeable individuals within the State for completion, and
(3) Form an in-state team to conduct the inventory and complete the forms.

The data set team leader prepares a memorandum (see Illustration 4) transmitting the inventory packet to the state directors of the states selected to participate in the limited inventory. Prepared for the lead state director's signature and forwarded through the state office data administrators, the memo lists the data set team members, the data sets to be inventoried, and the deadline for completing the inventory. The team leader forwards a copy of this memo (including items 1 and 2 below) to the Bureau Data Administrator, the lead assistant director's data administrator, the Service Center Data Administrator, and all state office data administrators.

The data set inventory packet will contain the following (see Appendix 4):

(1) Instructions,
(2) Definitions,
(3) Data entry forms, and
(4) A personal computer (PC)-compatible diskette containing a dBase III Plus (data) program to use in recording the inventory. **Note: use only 360 KB DS/DD formatted disks for recording the inventory data.**

The state office data administrators (SODAs) from the states conducting the inventory ensure that their states complete the inventory within the deadline. The SODA should train the people requested to do the inventory, explaining the data classification structure, standardization process, purpose, and importance. All data must be submitted on diskette and in a printout (See data standards program directions in Appendix 4 of how to run a complete report.) Inventory participants should submit to their SODA a separate disk(s) and other data) for each data set. **Data from more than one data set should not be combined on the same disk.** All data entry forms within each state should be submitted to the SODA for filing. SODAs should check these diskettes for completeness, ensures that each diskette contains data for only one data set, and copy the diskettes before submitting them to the lead SODA.

State inventory data should not be consolidated. In fact, the diversity of answers from any one state is desirable as long as all information requested on the data entry form is provided in the proper format.

Upon receiving the inventories from the states, the lead SODA

(1) Checks off the submissions as received and copies the diskettes,
(2) Eliminates duplicates of any attached graphic symbols and scales provided in response to item 8 on the inventory form instructions (see Appendix 3),
(3) Promptly sends the inventory to the data set team leader so that it can be evaluated.

If a state is not meeting the deadline, the lead SODA should go through the state director to get the inventory submitted as promptly as possible.

Consolidation and Analysis Of Inventory

Upon receiving the inventory diskettes, the data set team leader combines all state submittals into one program for each data set. (See data standards program instructions, Appendix 4). At this point the team leader calls a team meeting to start the analysis process.

With a complete print out report for each data set, sorted by data element name, the team begins its analysis performing the following tasks for each data set:

(1) Analyze the information from the inventory.
(2) Eliminate duplicate data elements.
(3) Refine data elements that appear to be the same or similar by devising consistent data element names, definitions, standards, and codes for elements with the same type of data.
(4) Add new data elements as needed.

(5) Group data elements with graphic (spatial) characteristics into logical "themes".

In analyzing the report to eliminate data elements with duplicate names, definitions, standards, and codes, the team reviews the definition and standards (if any were provided) for each duplicate data element name to ensure that they are duplicates. If the definition and standards differ, then the data elements are not true duplicates. For example, one state may name a data element for species of a plant, "Plant Name," whereas another state collects the same data but calls the data element "Vegetation Name." The team may decide that these two data elements are the same and determine the most suitable name for the data element.

The team should carefully make these changes to prevent the loss of different data needs. Where meanings are unclear, the team should consult with the office that submitted the data element name and description to clarify the exact type of data the data element was meant to represent. As part of this step in the analysis, the team should keep track, by data element, of the number of offices that collect or use a data element that was combined or eliminated. For data elements that are true duplicates, the duplicates are deleted.

Upon completing its first analysis, the data set team updates the data standards program with the revised data, deleting data elements and revising data element names, definitions, standards, and codes.

In updating, frequency of use will have to be increased. For example, if a data element with a once-a-week frequency of use is combined with a data element with a twice-a-week frequency of use, the new combined data element must be shown to have the higher, twice-a-week frequency.

The data set team runs a second report and repeats the process until satisfied that all duplications have been eliminated and the report accurately represents the data being collected by Bureau field offices.

Determining Corporate and Noncorporate Data Elements

After compiling a list of data elements, the team determines in which data category (corporate or noncorporate [formerly called discretionary]) each data element should be placed. Corporate data will be standardized bureauwide. Noncorporate data will not be standardized bureauwide but may be standardized on a state, district, or area basis. The data set team then sorts the data into corporate and noncorporate types and runs a report for each type (see Appendix 4, Attachment 3 for instructions on operating the Data Standards program).

BLM's corporate data is that needed throughout the Bureau--data that must be shared or combined among offices, usually through the computer. Corporate data is to be standardized (1) to ensure common understandings and meanings throughout the Bureau and (2) to allow data to be easily combined and quickly transmitted between offices. Standards allow data sharing and exchange among agencies. Standard terms, definitions, codes, and units of measure permit the use of relational data base management, which is planned for the Interim and Target Systems. Without standardization, BLM's corporate data cannot be computerized.

The data set team will use the following criteria to determine corporate data (a data element need meet only one criterion to be considered corporate):

(1) The data element is needed in or supplies input to a Washington Office required report.
(2) The data element is shared among states or with the Washington Office.
(3) More than one state is gathering and using the same data, even if it is not shared among States. If same data is being gathered, it should be standardized even if it is not computerized.
(4) The data element provides data needed to respond to many questions at the field or Washington office level.
(5) The data element is subordinate information needed to obtain required information. For example, in the formula pay - taxes - insurance = net pay, net pay is the required information, and pay, taxes, and insurance constitute subordinate information needed to calculate net pay.
(6) The data element is needed to document legal transactions required to support the Bureau's mission.

The team then updates the data standards program with its decisions on the data categories and, after the program has been updated, runs a list of corporate data elements and their characteristics. The team leader sends a copy of this draft list, through their SODA, to the lead assistant director's data administrator, who sends copies to other data set teams to reduce the chance of different teams working on the same data elements at the same time. The other team leaders review these lists and, if needed, call the originating team leader to negotiate which team will take the lead on a particular data element.

Developing Recommended Data Standards

The purpose of this step is to compile for the data set a comprehensive list of corporate data elements to describe the information needed for BLM's management. Although involving only the data elements on the final corporate list, generating recommended definitions, data standards, and codes is the most critical step in the data standardization process. The analysis in this step requires determining if standards already exist for each data element in the data sets being developed. If

standards already exist, the team must decide either to adopt existing standards or propose new ones. If standards do not exist, then the team must generate them.

The complex and lengthy process of compiling definitions, standards, and codes for the identified data elements on the corporate list involves the following steps:

(1) Comparing proposed data elements with the new Land Information System data dictionary.

(2) Comparing proposed data elements with the current (old) data element dictionary.

(3) Comparing proposed data elements with other Bureau stand-alone automated systems (such as Recreation Management Information System).

(4) Comparing and coordinating proposed data elements with automated systems and standards of other agencies, particularly resource managing agencies.

(5) Considering definitions, standards, and codes submitted during the inventory.The first step in the comparison process is to check all the data elements on the corporate list against the BLM data element dictionaries. During the interim period, two dictionaries will be in use: (1) the current applications data element dictionary and (2) a new Land Information System (LIS) data dictionary, which will be compiled as data sets are completed within the LIS data standardization process. The Service Center will maintain both dictionaries.

The team first compares the corporate list to the LIS data dictionary, if such a dictionary exists at the time. (Note: The Service Center is already developing an LIS data dictionary for lands and minerals data.) In making the comparison, the team should look for data elements with the same name as the element being compared or with similar names that mean the same thing. As in developing the data element lists from inventory information submitted by states, the team may find that several data element names describe the same data.

If a match (same data element name, definition, standard, and code) is found in the LIS data dictionary, further search and work are not needed. The team just needs to note in the corporate list that the data element is already included in the LIS data dictionary. If a data element on the corporate list cannot be matched with the Land Information System data dictionary, then the old data element dictionary should be reviewed for matches.

For each matching data element, the team should thoroughly review the definitions, standards, and codes in the old data element dictionary. Many of the old data elements, definitions, standards, and codes have never been used and may be outdated. The review should determine if the previous data elements, definitions, standards, and codes are still suitable for the way the data element is being used or being proposed for future use.

One of two decisions may result from this review:

(1) The data element definition, standards, and codes in the old data element dictionary are adequate and should be placed in the LIS data dictionary, or
(2) The data element definition, standards, and codes in the old data element dictionary are not adequate and need to be revised before being placed in the LIS data dictionary.

If the old data element definition, standards, and codes are inadequate, then the team prepares a new definition and list of standards to be used to record the data and possibly a new data element name. But the team must first conduct more analyses.

The team must review other automated systems for data elements related to the subject matter of the data sets. If other systems have definitions, standards, and codes for proposed data elements, the team must review these, adopting suitable ones and improving those that are not fully suitable. The team then uses the results of the analysis of other Bureau automated systems in the final analysis process of developing definitions, standards, and codes for the data elements they are working with.

Note that during the analysis process the team has to maintain a list of data elements by name, number if one exists, and source (i.e., system where located), which will be replaced by the data elements, definitions, standards and codes developed during the analysis process. This listing is included as part of the data set report.

In setting definitions and standards for BLM data elements, the data set team must consider definitions and standards used or needed by other agencies. Particular attention must be given to incorporating and using standards that are proposed for or have become Federal Information Publication Standards (FIPS) by other agencies. These standards are generated and reviewed by other agencies with an intent to exchange information.

The final step of the process is to generate definitions, standards and codes for the data elements on the corporate data list. The team should determine in advance whether it can develop definitions and standards independently or if it needs Service Center help. If the team needs help, the team leader should arrange with the lead state office data administrator to have a Service Center specialist join the team.

For data elements whose definitions and standards have been compiled elsewhere (data element dictionary, other automated systems, other agencies), the team must decide which to adopt. For data elements that have no definitions or standards, the team must generate them, including a data element name, definition, standards, and codes.

The following rules are to used in compiling definitions:

(1) The definition of the data element being defined should not contain the name of the element itself.
(2) The definition should describe the meaning and purpose of the data being defined and should not contain physical characteristics related to the existing data processing system.

The product of the analysis will be a data element name, a listing of all possible aliases, a definition, standards, and codes for each data element on the corporate list. The definition and list of standards and codes will be either taken from the old data element dictionary or the LIS data dictionary, or consist of new ones, revised from an existing data element or prepared by the team.

Preparing Data Set Reports

A separate report is required for each data set. Required elements of data set reports include the following:

(1) Letter of Transmittal to the lead assistant director's data administrator.
(2) Table of Contents of the data set report.
(3) Team Membership List, including office of each member.
(4) Recommendation Issue Paper on the process to be followed by the team.
(5) The Organizational Area of Inventory (BLM offices that participated in the inventory process for the data set).
(6) Consultation and Coordination (persons and agencies who participated in the standard development process and the roles they played).
(7) CorporateData report (with attachments as needed) showing proposed corporate data elements and their basic characteristics (ie., items 1 through 14 from the data entry worksheet).
(8) Definitions/Standards/Codes report from the dBase program (with attachments as needed).
(9) Listing of data elements with spatial characteristics, grouped by logical "themes".
(10) Findings of Comparison between Proposed Corporate Data Elements and Data Elements currently within the data element dictionary, and other Bureau automated systems (for each data element on the corporate list, where appropriate, a list of data elements by name, number if it exists, and source (i.e., system where located), which will be replaced by the data element, definition, standards, and codes developed by the team during the analysis process.
(11) Non-Corporate Data Report showing data elements not proposed for standardization and their basic characteristics.
(12) Data Disk(s) containing all data elements, corporate and noncorporate (Data.dbf).

The **final report** will require an additional section in which the team leader discusses problems, areas of conflict (major disagreements between states), and success of the process, and makes suggestions for improvement. The major purpose of this section is to alert the lead ADDA to problem areas and unresolved conflicts that they need to be aware of before recommending approval of the data elements and standards.

Chapter 5
Review & Approval

After completing the draft data set reports, the lead state office data administrator (SODA) sends them to the lead assistant director's data administrator (ADDA), the Service Center Data Administrator (SCDA), and all SODAs for a concurrent review. (See Illustration 5 for a sample request for review memo.) The request for review should include the following items:

(1) Name of the data sets to be reviewed.
(2) Deadline for returning comments to the lead SODA.
(3) Review points and procedures. (See below.)

The associate state directors, SODAs, lead ADDAs, and the SCDA ensure that each data set report is adequately reviewed by specialists and management, within their organizations (i.e. state office, Washington Office, and Service Center). They consolidate their organization's comments into one set, eliminating duplicate comments and resolving conflicts by working with the commenters. Then they send the consolidated comments to the data set team leader through the lead SODA.

Reviewers should address the following points:

(1) Should the data element be considered corporate or noncorporate? List data elements that should not be corporate or noncorporate.
(2) Are the proposed data elements clearly and accurately described?
(3) Should more data elements be added to the lists? If so, then the reviewer should submit a data inventory form with the pertinent information on the data element recommended for addition.
(4) What is the rationale for recommended changes or additions?
(5) Are data elements compatible for all program uses?
(6) Do the standards for each data element apply to all programs that would use the data elements?
(7) Are the definitions correct?
(8) Are more or fewer codes needed and are they correct?

The Washington Office, Division of Information Resources Management, Branch of Records and Information Security (WO 771) will ensure that information in the report for each data element complies with data security requirements.

Depending on the complexity and number of comments received on the draft reports, the data set team leader may schedule a team meeting to review comments and refine the report. The team or team leader revises the draft reports and prepares final data set reports. If the comments cause a substantial change in the draft report, the team leader may decide to request a second review. If a second review is felt to be needed a second draft report is prepared and circulated again through the review process. The team leader then sends the final reports to the lead assistant director's data administrator (ADDA) through the lead SODA. The lead ADDA verifies that the comments were handled and sends the final report to the Bureau Data Administrator (BDA). At the same time, all material accumulated by the data set team (files, data disks) are also sent to the BDA for retention. At this time the accumulated data entry forms may be discarded.

Upon receipt of the final data set report, the BDA verifies that the report is complete and contains all the required information and certifies that the data set reports have been completed. The BDA then reports to the Field Committee that the data set(s) reports that have been completed.

Chapter 6
Data Modeling

The Bureau Data Administrator (BDA) will forward the final data set report to the Service Center, Chief Division of Data Management (SC-320) for incorporation into the Bureau's Logical Data Model (LDM). The modeling of the data set may find duplication of data elements that are used in other programs or applications. Any duplicate data elements are reported to the BDA along with applications or programs that use the data element.

The process of modeling data set standardized data may require consultation with the BDA, ADDAs, SODAs and the data set team leader to determine use of the data, validate data relationships, and resolve data definition issues. The LDM involves the grouping of the data into entity and attribute (data element) relationships. A data dictionary (the LIS data dictionary) is being compiled to support the LDM. As new data is incorporated into the LDM, the dictionary will be modified and the elements given a name description consistent with a standard naming convention specified by the BDA and cross-referenced to the data set, data element, and description originally submitted with the final data set report. The pertinent sections of the LDM and data dictionary will be forwarded, as amended, to the BDA, ADDAs, SODAs and data set team leader for review and concurrence. The LIS data dictionary will also be provided, through the BDA, as a source for ongoing or future data set inventories.

The LDM process will provide the BDA with an analysis of potential data conversion issues and workload associated with programs and applications affected by data element modifications. The BDA is responsible for coordinating data base programming changes, where practical, including the implementing of a specific resource (data set) application at one or more test sites (Casper, Farmington, or other) for validation of the data elements and their relationships, as defined in the LDM. The LDM will be used as the framework for developing of the test application data base design. Chapter 8 describes the implementation process.

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Chapter 7
Spatial and Cartographic Standards

After the final Data Set Standardization Report is sent to the ADDA's and approved by the BDA, it will be sent to the Service Center Branch of Target Systems Data Modeling for two tasks: logical data modeling and development of GIS digitizing input and output (electronic display or hard copy thematic map) standards for themes and associated attributes.

The Spatial-Cartographic Standards Team (SCST) led by Mike Hutt (SC 670) and made up of cartographers and GIS specialists from across the Bureau is responsible for developing the GIS standards. To do this they will:

1) review and comment on the spatial needs indication for each corporate data element in the draft data set reports, and

2) receive the approved Final data set reports from the BDA and develop draft standards for digitizing input and output (electronic display or hard copy thematic map) for the necessary data elements.

The draft standards for spatially displayed theme and attributes will be rerviewed by the states through the SODA's and by the WO through the ADDA's. The data administrators will involve GIS specialists and program specialists in the reviews. The Division of Planning and Environment (WO 760) will review from the aspect of themes appropriate to the planning process. Appropriate SC personnel including the Branch of Resources under SC 320 will also review the draft standards. After comments are received, the SCST will develop the final standards and send to the BDA. At this point, WO 760 will be able to identify which themes and attributes should be mandatory for resource management plans and which should be optional or not necessary. WO 760 will issue directives on such planning designations.

Chapter 8
Implementation

After completion of modeling, the Bureau Data Administrator issues to the field an instruction memo on the new data elements and standards (including codes) for each group of approved standards. The memo will discuss revisions of existing applications, programs, and systems and tell when the data elements will be used for what applications and programs.

Data standards must be implemented immediately in all automated applications by a specified date or partial implemented by a specified date. Or implementation must be deferred until the target system is operating. When revisions of automated systems are planned, (within the interim period) the person responsible performs a workload analysis to determine how many workmonths needed to convert to the new data elements and standards. The results of the analysis are built into the annual work plan.

The instruction memo also directs that all new applications, systems, and programs developed after the memo's release use the new data elements and standards. Any manager generating and using different elements and standards will have to convert to and use the new data elements as directed.

The Bureau Data Administrator will direct the Service Center Data Base Administrator (SC DBA) to assign numbers or similar identifiers to data elements and enter the data elements and standards into the new Land Information System data dictionary (not the current dictionary). The Bureau will not use the new data elements until the validation process is completed. After validation, the SC DBA will allow access to the new data elements and standards on a specific date and will be responsible for documenting differences, changes, and deletions between the old data element dictionary and the LIS data dictionary. The SC DBA will also update the BLM library system with a paper copy of the new data elements and standards.

Chapter 9
Data Element Change Process

Process still in development. Will be included in updated versions of the handbook.

Appendix 1
BLM LIS Data Classification Structure

Introduction

The BLM Land Information System (LIS) data classification structure (DCS) (see Figure 2) is a management tool for organizing standardized data elements and for talking about data to BLM people and to those in other organizations--a formal representation of the ordering and accessibility relationships among the Bureau's corporate data without regard to how the data is stored.

As more BLM data is automated, the Bureau must manage it as a valuable corporate asset. One critical element of such management is a common structured understanding of the data and its relationships and a common language for talking about that data. The data classification structure has the following objectives:

(1) To portray the groupings of BLM's data to reinforce and institutionalize the concept of data as a corporate asset.
(2) To reinforce BLM values about the importance of multiple use management.
(3) To organize BLM's data.
(4) To provide a logical framework to help determine the physical structure of BLM's automated data bases and to allow the adding, deleting, or combining of data groupings to meet future needs.

The following specific descriptors form the initial content of the BLM LIS data classification structure (DCS). The DCS consists of eight major groupings: information categories, information subcategories, data sets, data subsets, data elements, definitions, standards, and codes. BLMs data is portrayed in each of these groupings, further subdivided depending on grouping. Additions and changes will be proposed and approved according to program needs over time through the Bureau Data Administrator. Although data elements, definitions, standards, and codes also form part of the DCS, they are not presented here because they have not yet been developed.

FIGURE 2
BUREAU OF LAND MANAGE LAND INFORMATION SYSTEM
DATA CLASSIFICATION STRUCTURE

Information Category	Information Subcategory	Data Set	Data Subset
LOCATION			
Public Land Survey System	Rectangular Surveys		
	Special Surveys		
GCDB		Legal Land Description Status	
Status		Standard Data Elements Exist	
LLD		Standard Data Elements Exist	
Resource Base Data		Terrain Transportation Surface Hydrology Cultural Features	
COMMON RESOURCE DATA			
Soil		Soil Type Soil Interpretation	
Air Resources		Climate Air Quality	
Water		Ground Water Surface Water	
Vegetation		Vegetation Characteristics	
Geology/Minerals		Geologic Formation General Rock Type Mineral Resources Inventory	

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
Paleontology		Locality	
Animals	Wild Horses/Burros Animals	Populations	
Cultural Resources	Inventory		
Recreation		Cave Resources	
Demographics/ Economics			
RESOURCE MANAGEMENT			
Resource Mgmt Planning	RMP/MFP	General Info. Maintenance	
	Activity Plans	Amendments Revisions	
	Project Plans	Plan Decisions Monitoring	
	Functional Plans	Designations	
Lands		Factors of Analysis	
		Authorizations	Rights-of-Way Leases Permits Easements
		Lands Processes	Exchanges Sales Grants Agri. Entries Omitted Lands Color-of-Title Alaska Easement Acquis. Designations Withdrawals Classifications Rights-of-Way Corridors Realty Trespass

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
Minerals	Solids Coal & Other Leasables	Interpreted Info.	Leased Inventory Unleased Inventory Unsuitability Criteria Surface Owner Consent Coal Dev. Potential Multiple Use Screens NEPA Documents Env. Studies Infrastructure
		Factors of Analysis Activity Plans/Plans of Operation	LU Planning Base Coal Exchange Alluvial Valley Floor Designations Leasing Potential Conflicts
		Research	
		Monitoring/ Compliance	Diligence VIEU
		Authorizations/Use	Readjustment/ Renewal Mine Plan Logical Mining Unit Royalty Reductions Lease Assignments Lease Suspension
	Locatables	Interpreted Info. Factors of Analysis Monitoring/ Compliance Authorizations/ Use	

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
	Salables	Interpreted Info. Factors of Analysis Activity Plan/ Plan of Operation Monitoring/ Compliance Authorizations/ Use	
	Fluids	Interpreted Info. Factors of Analysis	Res. Assessments
		Activity Plan/ Plan of Operation	
		Monitoring/ Compliance	Inspections Enforcement Actions Drainage & Diligence
		Authorizations/ Use	Leases Bonds Operational Approvals
Watershed (Soils, Air & Water)		Interpreted Info. Factors of Analysis	
		Activity Plans/ Amendments	General Info. Resource Objectives
		Monitoring/ Compliance Research Authorizations/Use	

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
Range Management		Interpreted Info.	Ecological Sites
		Factors of Analysis	General Info.
		Activity Plans/ Agreements	Resource Objectives
		Monitoring/ Compliance	
		Research	
		Authorizations/Use	
Wild Horses & Burros		Interpreted Info.	Vegetation
			Water
			Features
			Activities
		Factors of Analysis	
		Activity Plans	General Info.
			Resource Objectives
		Monitoring/ Compliance	
		Research	
		Authorizations/Use	
Wildlife & Fisheries		Interpreted Info.	
		Factors of Analysis	
		Activity Plan	General Info.
			Objectives
		Monitoring	
		Research	
		Authorizations/Use	

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
Recreation		Interpreted Info.	Visitor Use Visitor Projections Recreation Resource Values Experience Opportunities Economic Effects Hazards Demographic Info.
		Factors of Analysis Activity Plan/ Project Plans Monitoring/ Compliance Research Authorizations/Use	
Visual Resources		Interpreted Info.	Distance Zones Scenic Quality Sensitivity Level
		Factors of Analysis Monitoring Research	
Wilderness	WSA	Interpreted Info.	Initial/Intensive Inventory Indicator Baseline Indicator Trend
		Monitoring/ Compliance	Surveillance Reclamation
		Authorizations/Use	3802 Pl. of Op.

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
	Wilderness	Interpreted Info. Activity Plan Authorizations/Use Monitoring/ Compliance	
Cultural Resources		Interpreted Info. Factors of Analysis Activity Plans (CRMPs) Monitoring/ Compliance Research Authorizations/Uses	
Paleontology		Interpreted Info. Factors of Analysis Activity Plan Monitoring/ Compliance Research Authorizations/Use	
Forestry		Interpreted Info. Factors of Analysis Activity Plan Monitoring/ Compliance Research Authorizations/Use	

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
Fire Management		Environment	Fuels Topography Weather Air Quality Valuation Aesthetics Legal Limits
		Incident Action	Resource Arrival Respons. Action Support Action
		Management Direction	Directives Operation Plans Procedures Policies
		Certification & Qualification	Standards Training Certification Qualification
		Status	Resource Status Incident Status Situation Status
		Detection	Recognition Ident. Notification
		Mobilization Resources Required	
		Resource Ordering	Dispatch Report Resource Order
		Demobilization	Surplus Resources Demob. Plan Release
		Documentation	Non Archived Info. Archived Info.

FIGURE 2 Cont.

Information Category	Information Subcategory	Data Set	Data Subset
Hazardous Materials		Interpreted Info. Factors of Analysis Activity Plan Monitoring/ Compliance Authorizations/Use	
PHYSICAL FACILITIES			
Transportation Roads Trails Bridges Major Culverts Airfields Waterways		Construction Inventory Maintenance	
Buildings		Construction Inventory Maintenance	
Resources		Projects	
GENERAL MANAGEMENT			
Bureau corporate standardized data will be determined for these categories at a later date.			

Information Category: Five major information categories are used for labeling data used in meeting BLM mission requirements. Reflecting BLM's mission and what BLM does, these categories provide a logical pattern or structure for thinking about data.

Location: Information about all facets of the Public Land Survey System, land parcels, and the land net.

Common Resource Data: Common basic data on the natural and human resources that use or exist on the public lands. This data is "common" in that it is used by more than one program and provides information on fundamental physical attributes that can be measured or observed. Basic data has not yet been interpreted, combined, or processed for program management. Basic data includes the basic spatial and alphanumeric physical inventory of resources and information on the presence and location of resources but not BLM management practices or resource manipulation. The items within this category are intended to be useful for any specialists. Generic terms are used; "animal" is used rather than wildlife, and "vegetation" is used rather than forage.

The continuum of resource data, however, ranges from very basic to highly interpreted. When the distinction between the two levels of data is not clear, decisions must be made and followed. Ultimately the location selected for a type of data is not critical. What is critical is that if the data is corporate, it is included at some spot in the data classification structure.

The common resource data (see Figure 2) will be owned, shared, and used by many programs, reducing the redundancy of data collection and storage among resource disciplines.

Resource Management Data: Interpreted data generated from information about resources based on calculations, manipulations, or professional judgments. This data deals with the management of the public lands and resources and includes programmatic tracking information and calculations, records, and other information about resource management. It also includes fiscal and permitting data. It does not include data on the physical location and attributes or calculations of the basic resource.

A set of six standard data sets were selected for use as appropriate under the resource management category:

> Interpreted Information - This data set will contain a list of the management inventories and information for a program. Unlike common resource data, information in this data set is not base inventory oriented

(i.e., what resource is where, density/diversity of vegetative species or location of plant communities). This data set will include data massaged or interpreted from a management perspective.
Factors of Analysis - The data set will contain the data needed to implement the factors of analysis in BLM Manual 1620-1625. These factors of analysis will help tie each of the programs to the Bureau planning system within the classification structure and will be depicted in the data elements as existing resource condition and trend, resource potential and capability, resource limitations, and social/economic and legal considerations.

Activity Plans/Plans of Operation - The data set would consist of the individual activity plans, plans of operation, agreements, and other instruments that fit into this level of resource planning. Each program should review the Data Elements for Resource Management Plans developed by the Planning Data Set Team. Each program must add data elements that are unique to that program and thus not covered by the Planning team.

Monitoring/Compliance - The data set would be a listing of monitoring or compliance operations by program. Data elements would depict the monitoring and compliance by purpose, location, method, success, e.g., purpose - determination of compliance with oil field rehabilitation plan, location - Buffalo Resource Area - Dead Horse Oil Field, -Windshield survey, success - 100%.

Research - List of research projects by program. Data elements would depict the purpose, type, and results of the research plus anything else of importance.

Authorizations/Use - List of licenses, permits, leases, etc. by program. Data elements would include such things as location - by state, district, resource area and on-the-ground appropriate planning and NEPA documents, expiration date, permittees, and allotments.

Physical Facilities and Land Improvements Data: Statistical and management data about physical facilities and land improvements managed by BLM, the Bureau transportation system and other roads considered in the district transportation plans, and buildings, dams, and other resource management facilities and improvements built and maintained by BLM, including single-program facilities, such as wildlife viewing structures, campgrounds, boat launches, chainings, and seedings.

General Management Data: Data about all other aspects of BLM business, including organization, vehicle management, aviation, safety, equal employment opportunity, and contracting. Some general management data may be part of Department of the Interior data management systems. Although such data may show on this matrix and be part of this data structure and the Bureau LIS data element dictionary, the actual data elements are part of departmental systems.

The following are data set definitions for data sets and subsets listed to date for each information category.

LOCATION

PUBLIC LAND SURVEY SYSTEM

The original survey system for all states in the United States excluding the original thirteen colonies, Hawaii and Texas. This system specified that a rectangular land survey be performed based on one or more arbitrary origins in the state. The north/south line of the origin was to be a meridian of longitude while the east/west line was to be perpendicular to the meridian. The state was then divided into six-mile squares (36 square miles) called townships. Within townships, areas were divided into one-mile square areas called sections. Subdivisions of sections could then be the basis for legal descriptions of land. These subdivisions of sections were called aliquot parts, e.g., north east 1/4 of the northwest 1/4.

Rectangular Surveys

Those surveys performed to establish or update the township and section locations.

Special Surveys

Surveys performed within the grid of the regular surveys to locate parcels of legal interest, e.g. parcels owned or leased, to locate projects within the grid of the regular surveys, e.g. towns, bridges, rights-of-way, etc.

Geographic Coordinates Data Base (GCDB)

A data base containing geographic coordinates for corners of the Public Land Survey System (PLSS). The GCDB is designed to provide graphic portrayal and automated mapping of the land net. Provides accurate ties of lands and resources data to the legal cadastral survey and to the actual points on the ground.

Data Sets

Legal Land Description (LLD) - Survey as described on MTP including geopolitical information.

Status - Land and/or mineral ownership information, withdrawals, classifications, segregations, etc.

Resource Base Data

Collective or individual features, both natural and cultural improvements, and significant changes in land character or relief. Information will serve as the standard base layers to be found in all Geographic Information Systems used by BLM.

Data Sets

Terrain - Digital elevation model (DEM); contours, slopes and elevation.

Transportation - Roads, railroads, trails, canals, pipelines, transmission lines, bridges, tunnels, etc.

Surface Hydrology - Streams, rivers, lakes, ponds, wetlands, reservoirs, and shorelines.

Cultural Features - Buildings, airports, dams, and other landmark structures or objects.

COMMON RESOURCE DATA

SOIL

Data Sets

Soil Type - Major soil properties and soil associations on an ecological site, including soil properties that affect plant, soil, and water relationships.

Soil Interpretation - Site interpretation giving water quality, soil stability, erodibility, landslide potential, important watershed areas, special attributes such as chemicals, potential of site to produce vegetation, and other soil interpretations needed for resource management.

AIR RESOURCES

Data Sets

Climate - The composite long-term average of an area or region's weather conditions described by temperature, precipitation, wind speed and direction, humidity, solar radiation, cloudiness, and atmospheric stability.

Air Quality - The quality of the ambient air as distinguished by the concentration of its constituent gases, gaseous and particulate air pollutants, and the resultant visibility.

WATER

Data Sets

Ground Water - All water below the land surface, including water within unsaturated and saturated zones.

Surface Water--All water whose surface is exposed to the atmosphere.

VEGETATION

Data Set

Vegetation Characteristics - The common characteristics of vegetation that are used to describe and differentiate vegetation species, vegetation species populations, and vegetation communities. Common characteristics are unique to the vegetation and are not management interpretations or measurements of site characteristics, such as slope, aspect, soil depth and texture.

GEOLOGY/MINERALS

Data Sets

Geologic Formation - Formation-level information inventoried and maintained by United States Geological Survey (USGS). Although BLM does not intend to duplicate USGS's efforts, when BLM specialists need to maintain geologic/minerals information either spatially or alphanumerically, they will store it in this data set, using USGS terminology and coding conventions. Basic information about the geologic environment of mineral resources, including lithology, geologic structures, weathering, and rock alterations. Information that a BLM mineral specialist needs for interpreting and assessing the potential for the occurrence of mineral resources within a given area.

General Rock Type - Broad general categories of common rock types and surficial parent materials for communicating geologic interpretations other than minerals. Generally used by minerals and geology specialists and nonminerals specialists to communicate in nonminerals programs. Suitable category for working with the Forest Service to develop data elements because the Forest Service has the same category.

Mineral Resources Inventory - Information maintained on the total reserve base and recoverable reserves of leasable, locatable, and salable minerals on public lands.

Data Subsets

Solids, Noncoal Leasables: Basic information about the geologic environment within which solid noncoal leasable mineral resources might exist; information needed for interpreting and assessing the potential for the occurrence of solid noncoal leasable minerals within a given area.

Coal: Basic information about the geologic environment within which coal might exist; information needed for interpreting and assessing the potential for the occurrence of coal within a given area.

Locatable Minerals: Basic information about the geologic environment within which locatable minerals might exist; information needed for interpreting and assessing the potential for the occurrence of locatable minerals within a given area, including geochemical, geophysical, and mineral occurrence data and data on strategic and critical minerals.

Salable Minerals: Basic information about the geologic environment within which salable minerals might exist; information needed for interpreting and assessing the potential for the occurrence of the salable mineral resources within a given area. Data elements would include type (granite, sand, gravel, limestone), known salable mineral deposits, and past and present production areas.

Fluids: Basic information about the geologic environment within which fluid mineral resources might exist; information needed for interpreting and assessing the potential for the occurrence of fluid mineral resources within a given area.

PALEONTOLOGY

Data Sets

Locality - inventory information relating to the presence/potential, type, and condition of fossil occurrences. Data elements would include information on geologic formation, fossil type, age, taxonomy, geographic location, and types of surveys (literature, field).

ANIMALS

Data Sets

Population - All data pertaining to wild and free roaming animal populations, including wild horses and burros, which essentially involves natural history, demographics, and distributions separate from habitat data as contained in WORDS.

CULTURAL RESOURCES

Data Sets

Inventory - Inventory on archaeological and historical resources, including location, site type, artifacts found at a site, and other information recorded on site inventory forms.

RECREATION

Data Sets

Cave Resources - Information on the characteristics of a cave, including cave location and miles of, location of, and dimensions of passageways.

DEMOGRAPHICS/ECONOMICS

Data Set

Human Activities - Information about timing, extent, type, and location of human activities on and near public lands.

RESOURCE MANAGEMENT PLANNING

Data Sets

General Information - Information needed to identify (or describe) a particular resource management plan (RMP) or management framework plan (MFP) not yet replaced, activity plan, project plan or functional plan. Data elements could include such things as state, district, resource area, name and number of plan, date plan approved, etc.

Designations - Are formal Congressional, Secretarial, Presidential, Bureau and other Federal Agency designations assigned to public lands under BLM administration pursuent to specific and discret authorization. The data set would be a list of attributes about the designations. Examples of designations are national wild and scenic rivers, national natural landmarks, national historic and scenic trails.

Monitoring - This data set addresses the standards, intervals and other information used to measure the progress of implementation of decisions from RMPs (and MFPs not yet replaced by RMPs), activity plans, project plans, and functional plans. The purpose of this monitoring is to determine the rate of plan implementation and the effectiveness of plan decisions in terms of meeting plan goals and objectives. Data elements could include such things as date decision implemented, objectives met, objectives not met, etc.

Maintenance - This data set depicts when new or additional information is added to a plan or when minor changes are made in a plan that do not result in expansion in the scope of resource uses or changes in plan decisions or management prescriptions. Data elements could include such things as the date maintenance took place, location in the document and what the change was.

Amendment - This data set depicts that an amendment to a RMP (or MFP) has been completed. An amendment requires NEPA documentation and public notice and involvement opportunities. Data elements could include sluch things as level of NEPA analysis, date of amendment approval, what the amendment consisted of, etc.

Revision - A plan revision is development of a new Plan. Data elements could include schedule dates, name of plan, etc. In the case of Resource Management Plans, data elements must include the key proposed RMP/EIS

shedule dates used in the Director's Planning Schedule and be depicted as NOI date, DRMP/DEIS date, PRMP/DEIS date, and RMP/ROD date.

Plan Decisions - This data set depicts the decisions from RMPs (and MFPs not yet replace), activity plans, project plans and functional plans in priority order for implementation. In the case of RMPs (and MFPs not yet replaced) decision categories to be used are as follows:

Resource condition objectives - Decisions that depict the desired state BLM would like to achieve for environmental values and socioeconomic conditions.

Land use allocations - The allowable, limited or excluded uses for an area and the terms and conditions of such uses.

Management directions - The specific actions BLM will take to achieve the aforementioned decisions.

LANDS

Data Sets

Factors Of Analysis - The data set depicts the Factors of Analysis in Bureau Manual 1620 - 1625. These factor of analysis help tie each of the programs to the Bureau planning system within the classification system.

Authorizations - Any of a variety of authorizations that BLM grants to users under the authority of several laws. Authorizations carry with them holder rights and obligations, which vary with the type of authorization.

Data Subsets

Rights-of-Way: An instrument issued under Title V of the Federal Land Policy and Management Act or issued on or before October 21, 1976, under the then existing statutory authority authorizing the use of a right-of-way over, upon, under, or through public lands for construction, operation, maintenance, and termination of a project.

Leases: An authorization to possess and use public lands for a fixed period of time.

Permits: A short-term revocable authorization to use public lands for specified purposes.

Easements: (Issued by BLM) An authorization for a nonpossessive, nonexclusive interest in lands that specifies the rights of the holder and the obligation of BLM to use and manage the lands according to the terms of the easement.

Lands Processes - A listing of all CR/ORCA lands processes that are not a specific authorization as described in Authorization/Use. Examples are exchange, easement, classification, sale, and trespass.

Data Subsets

Exchanges: The transfer of lands and interests in lands from the United States to a person in exchange for the conveying of lands and interests from the person to the United States.

Sales: The selling of public land or interests in public land at no less than fair market value.

Grants: A conveyance of lands or interests in lands at no charge to entities under a variety of laws.

Agricultural Entries: Applications to enter upon, settle, and eventually obtain patent to public land under any of the agricultural land laws.

Omitted Lands: Lands other than islands determined to be public lands of the United States erroneously or fraudulently omitted from the original surveys.

Color-of-Title: Conveyance of land that has been held in peaceful adverse possession by a claimant, his ancestors or grantors, under claim or color-of-title for more then 20 years, or land that has been held since before January 1, 1901, during which time taxes have been paid as levied by state and local government.

Alaska: Transfer of land ownership in Alaska by conveyance, grant, or sale under traditional BLM acts (i.e., Federal Land Policy and Management Act and the Indian Allotment Act) and legislation specific to Alaska.

Easement Acquisition: The purchase of land or interests in land not owned by the United States.

Withdrawals: Withholding an area of federal land from settlement, sale, location, or entry under some or all of the general land laws.

Classifications: A specific finding that certain public lands are either (1) more valuable or proper for lease or disposal under one or more of the public land laws or (2) more suitable for retention under federal management.

Realty Trespass: Use, occupancy, or development of the public lands or resources without a valid land use authorization issued under 43 CFR Parts 2800, 2810, 2880, or 2920.

MINERALS

Solids (Coal and Other Leasables)

Some data sets and subsets may apply only to coal or only to other leasables.

Data Sets

Interpreted Information - Interpretive management inventories and information needed to operate the leasable minerals programs, including lease/license-specific data, elements on coal or mineral reserve quality, mining methods to be used, market demand, and surface owner agreements.

Data Subsets

Leased Inventory: The reserve base and recoverable reserves under lease. These reserves would be further labeled as surface minable or underground minable.

Unleased Inventory: Interpreted information other than reserve base and recoverable reserves about resources that are not under lease. These reserves would be further labeled as surface minable or underground minable.

Unsuitability Criteria

Surface Owner Consent (Consultation)

Coal Development Potential

Multiple Use Screens:

Environmental Studies: A listing of resource-specific data collected for EIS efforts.

Infrastructures: Information about the socioeconomic infrastructure in relation to specific proposed or existing coal leases or mines. Information would include access; nearby rights-of-way; and nearest community, Indian reservation, and railroad and highway services and their distances to leases or mines.

Factors of Analysis

Data Subsets

Unsuitability Criteria:
Surface Owner Consent Agreement:
Coal Development Potential:
Multiple Use Screens:

Activity Plans/Plans of Operation - Information on exploration and mining plans.

Research (Technical Investigations)

Monitoring/Compliance - Information needed to ensure that lessees/licensees comply with the Mineral Leasing Act (30 U.S.C. 181 et seq.), NEPA/ROD mitigative stipulations, and other requirements. Such data would include lessee qualification and information on resource development and production.

Data Subsets

Diligence:
VIEW:

Authorizations/Use - Lease numbers, administrative delegation, lease location, NEPA documentation information, modifications, suspensions, and administrative dates such as issuance date and renewal/readjustment date.

Data Subsets

Readjustment/Renewal:
Mine Plan:
Logical Mining Unit:
Royalty Reductions:
Lease Assignments:
Lease Suspension:

Solids (Locatables)

Data Sets

Interpreted Information - Information interpreted from a management perspective. Data elements include number of active mining claims, number of mining claims having current assessment work, number of acres in a claim, number of acres patented, number of acres under patent application, and number of mining claim operations and type and location in special management areas.

Factors of Analysis - Factors of analysis in Bureau Manual 1624 for locatable minerals. Data elements would include environmental laws affecting the location of mining claims; congressionally designated areas, Bureau special designations such as ACECs, RNAs, and ORV closures; mineral occurrence potential by type; commodity or groups of commodities and location; and the location of mining claims with valid existing rights.

Monitoring/Compliance - Monitoring and compliance in the surface management program, including such data elements as dates of compliance exams, number of operations in noncompliance, and number of notices of noncompliance sent out.

Authorizations/Use - A list of all notices and plans of operation with their locations; mining claimant and operators of each mine; number of occupancy trespass cases by state, district, and resource area; and on-the-ground planning and NEPA documents.

Solids (Salable)

Data Sets

Interpreted Information - Information interpreted from a management perspective, including such data elements as cubic yards and tons of mineral material available and the value of mineral materials.

Factors of Analysis - Factors of analysis in Bureau Manual 1624 for mineral materials. Data elements would include environmental laws affecting the disposal of mineral materials; congressionally designated areas; Bureau special designations such as ACECs, RNAs, WSAs, and ORV closures; and mineral occurrence potential by type, by location, and by commodity or group of commodities.

Activity Plans/Plans of Operations - List of activity plans for designating

community pits or common use areas.

Monitoring/Compliance - List of monitoring and compliance examinations performed in the mineral materials program. Data elements would include the date that compliance exams were performed and the number of operations in or not in compliance.

Authorizations/Use - List of all free use permits, types of sales of mineral materials--competitive, noncompetitive, nonexclusive, and individual--and information about trespass cases by location, planning and NEPA documentation, expirations, and operators.

Fluids

Data Sets

Interpreted Information - Generally derived from other data sets such as factors of analysis, land use plan decisions, monitoring/compliance, and authorization used. Data set includes a list of basic inventories and information concerning oil, gas, and geothermal energy. Data supports budget justifications, answers inquiries, or supports management oversight. Data elements include number of leases and wells by type, facilities, types of approvals, and production.

Factors of Analysis - Factors of analysis depicted in Bureau Manual 1620-1625: potential for occurrence, cumulative impacts of reasonably foreseeable developments, and need for constraints. A data subset would be resource assessments. Data elements include formation codes, production amounts, value of resource, well name and number, bottom hole location, surface location, county, and state.

Activity Plans/Plans of Operation - List of activity plans, plans of operation, and formal agreements. The data elements include the type of formal agreements such as units, gas storage agreements, development contracts, agreement dates, and acreage.

Monitoring/Compliance - All activities that monitor industry compliance with regulations, authorizations, and agreements. Data subset includes monitoring (inspection), enforcement actions, drainage, and diligence. Data elements include type of inspections (production, drilling, plugging, and surface), inspection intensity (level 1, 2, and 3), type of compliance action, assessment amount, and description of noncompliance.

Authorizations/Use

Data Subsets

Leases
Bonds
Operational Approvals

WATERSHED (Soils, Air, and Water)

(1) A total area of land above a given point on a waterway that contributes runoff water to the flow at that point; (2) a major subdivision of a drainage basin.

Data Sets

Interpretive/Information - Data on basic inventories and information for the Watershed Management Program (soil, water, and air). Data elements include acres of vegetation types; desired plant community and species involved; data collected as part of the SVIM; vegetation and climate; monitoring; vegetation cover; sediment yield; runoff; and principal soil, vegetation, and water data sources, including soil surveys, soil interpretations, ecological site descriptions, and reservoir sedimentation and air pollution studies.

Factors of Analysis - Factors of analysis as shown in Bureau Manual 1620-1625 help tie the Watershed Program to the Bureau planning system within the classification structure. These factors depict the data elements as existing resource condition, including climate; resource potential and capability; resource limitations; and such socioeconomic and legal considerations as the Clean Water Act, Safe Drinking Water Act, Executive Orders 11988 and 11990, and watershed vulnerability, responsiveness, and demands.

Activity Plans/Plans of Operation - Individual activity plan elements, plans of operation, agreements, and other instruments that fit into this level of resource management by program. The data elements would depict the name of the activity plan, date approved, land use plan to which the activity plan conforms, NEPA documents, percentage of plan implemented, and results of implementation. Data elements, which will contain all data relating to a watershed management plan or agreement, are divided into subsets of general information and objectives.

Monitoring/Compliance - Monitoring or compliance operations by program purpose, schedule, location, method, and success, e.g. purpose - determination of compliance.

Research - Research projects by program purpose, type, research results, and anything else of importance.

Authorizations/Use - Use authorizations; watershed by name and acres by program, not to be confused with land use plan monitoring in RMPs, MFPs, and EIS/RODs except for those dealing with watershed initiatives. Data elements would include location by state, district, and resource area; planning and NEPA documents; expiration date; authorized use cases; general public use; and use conflict areas. Consideration with other state, federal, and local agencies as required by the Watershed Protection Act.

RANGE

Data Sets

Interpreted Information - Information on the Range Program's basic inventories: pounds of forage per acre, desired plant community and species, and data collected as part of the SVIM.

Data Subsets

Ecological Site: A kind of rangeland with a specific potential natural community and site characteristics, differing from other kinds of rangeland in its ability to produce vegetation and to respond to management. Ecological site is the same as range site.

Factors of Analysis - As shown in Bureau Manual 1620-1625 these factors will help tie each of the programs to the Bureau planning system within the classification structure. These factors would be depicted in the data elements as existing resource condition and trend, resource potential and capability, resource limitations, and socioeconomic and legal considerations.

Activity Plan - List of allotment management plans (AMPs) or agreements and all data relating to each. Divided into subsets of general information and objectives, data elements would include AMP name, date approved, LUP to which AMP conforms, NEPA documents, percentage of plan implemented, and results of implementation.

Data Subsets

General Information: Describes the plan of action, agreement, or plan of operation and how action relates to MFP/ROD and LUP. Subset will include general information on state, district, resource area, dates, and approval parties.

Resource Objectives: Describes the actions involving implementing activity on the ground: why, results expected, mileposts, and project start and completion dates. Clear description of resource and management objectives and how they relate to the land use plan. Defines specific, measurable, attainable, and trackable objectives.

Monitoring/Compliance - List of monitoring or compliance operations on activities and individual decisions made in a land use plan, including monitoring and compliance by purpose, schedule, location, method, and success.

Research - List of research projects, including purpose, type, research results, and anything else of importance.

Authorizations/Use - List of licenses, permits, leases, preference, allotment, and acres. Not to be confused with LUP monitoring in RMPs, MFPs, and EIS/RODs except those dealing with the range EIS initiatives. Data elements would include location by state, district, and resource area; on-the-ground, appropriate planning and NEPA documents; and expiration date, permittees, allotments, fees, conflict areas, unauthorized use cases, and general public use of range resources.

WILD HORSES AND BURROS

Data Sets

Interpreted Information - Criteria and standards for assessing characteristics and importance of vegetation, water, features, and human activities as components of wild horse and burro habitat.

Data Subsets

Vegetation: Nutritive value and poisonous principles and characteristics of plants on wild horse and burro range. Criteria and standards for evaluating plant characteristics and measuring their value as components of wild horse and burro habitat.

Water: Accessibility and quality of water sources in wild horse and burro habitat, including criteria and standards for evaluating water characteristics and determining their importance in such habitat.

Features: Criteria and standards for assessing importance of natural and human-made features and determining their role in wild horse and burro herd areas.

Activities: Criteria and standards for assessing the importance of human activities in wild horse and burro herd areas.

Factors of Analysis - Social, political, and economic data used in the planning process to analyze and make decisions about wild horse and burro issues.

Activity Plans - Data on herd management areas and herd management area plans (HMAPs): size, location, date plan signed, objectives, and decisions.

Monitoring/Compliance - Data on habitat, animals, and activities that change over time or need to be studied to determine progress toward objectives and changes in resources or conditions that affect wild horses or burros.

Authorizations/Use - All data related to the capture, processing, and shipment of wild horses and burros; applications for adoption, adoption and compliance; destruction of these animals; and administration of the Wild Horse and Burro Program.

WILDLIFE AND FISHERIES

Data Sets

Interpreted Information - Data similar to common resource data but normally massaged or interpreted as it is used from a management perspective, like that included with the IHICS data base or TEDS. An example of interpreted data is vegetation and water data used to portray carrying capacity or compute habitat condition for a species. This data set is collected in program inventory procedures.

Factors of Analysis - Data representing supplemental program guidance and used as part of the planning process to aid in analysis and decisionmaking. Partly overlapping with interpreted information or other sets, this set includes such different data as demands, input from other entities, social factors, economic values, and policy constraints.

Activity Plans/Plans of Operation - All data relating to the habitat management plan or agreements between BLM and state agencies or interest groups for site-specific activities.

Data Subsets

General Information: General information about the plan, similar to the data now included in the HMP data base.

Objectives: Data representing objectives in the plan that would be similar in content to the set for LUP decisions but would be at the activity plan level and be site specific and/or quantified.

Monitoring/Compliance - Data elements reflecting monitoring work. Many data bases and systems reflecting this set are in progress at all organizational levels.

Research - All data for program-related research conducted by BLM and other entities. This set could perhaps form a separate information category and cover all programs, but it is distinct from other sets.

Authorizations/Use - Parallel to data in other programs but not as straight forward because a fish and wildlife permit system per se does not exist. Data set would include authorizations that rely on fish and wildlife resources, such as permits, hunting licenses, Sikes Act stamps, baiting permits, collecting permits, and animal damage control authorizations. Data set could also include data that defines general public use of the resource, such as information on wildlife viewing.

RECREATION

Data Sets

Interpretive Information - Results of evaluations that provide data for recreation planning and management.

Data Subsets

Visitor Use: Who and how many people visit an area, what they are doing, where they come from, where they are recreating, and why they are using public lands.

Visitor Projections: Visitor use forecasts based on supply and demand variables.

Recreation Resource Values: Natural, cultural, and scenic resources important to recreation, including information on the relative value of these resources for recreation and how well they provide sustained recreation use. This data subset does not include basic resource data.

Experience Opportunities: Availability of experience opportunities on BLM lands in existing physical, social, and managerial settings.

Economics Effects: Regional economic impacts and economic benefits of recreational use on BLM lands.

Hazards: Natural and cultural features hazardous to recreationists.

Demographic Information: Age, sex, location, and income of users or potential users of BLM lands.

Factors of Analysis - Factors listed in Bureau Manual 1624--data elements that must be considered in land use planning.

Activity Plans/Project Plans - Major information components required in recreation area management and project plans (see Bureau Manual 8322 and 8323).

Monitoring/Compliance - Monitoring and compliance work required to ensure compliance with RMP decisions and use authorization requirements.

Research - All data related to recreation program research.

Authorizations/Use - Information on permits, fees, cooperative management agreements, memorandums of understanding, and other use authorizations.

VISUAL RESOURCES

Data Sets

Interpretive Information - Visual resource data developed to support RMP and activity planning, including visual resource inventory classes, sensitivity levels, and distance zones.

Data Subsets

Distance Zones: Evaluation of factors relating to determining distance zones (see BLM Handbook H-8410-1).

Scenic Quality: Evaluation of all key factors relating to determining scenic quality (see BLM Handbook H-8410-1).

Sensitivity Level: Evaluation of all key factors relating to determining sensitivity of visual resources (see BLM Handbook H-8410-1).

Factors of Analysis - Factors of analysis required by Bureau Manual 1621.

Monitoring/Compliance - Monitoring and compliance work required to ensure that visual quality objectives approved in RMPs are properly adhered to, including the completion of contrast ratings for projects as required by Bureau Manual 8431 and BLM Handbook H-8431.

Research - All data related to visual resource management research.

WILDERNESS

Wilderness Study Area

Data Sets

Interpreted Information

Subsets

Initial/Intensive Inventory: Areas with wilderness characteristics were determined and designated wilderness study areas (WSAs).

Indicator Baseline:

Indicator Trend:

Factors of Analysis

Activity Plans/Plans of Operations

Monitoring/Compliance

Research

Authorizations/Use

Wilderness Areas

Data Sets

Interpreted Information

Factors of Analysis

Activity Plans/Plans of Operations

Monitoring/Compliance

Research

Authorizations/Use

CULTURAL RESOURCES

Data Sets

Interpreted Information - An interpretation of raw inventory and evaluation data from a general land use perspective, i.e., a classification of lands according to (1) cultural resources known and projected to occur; (2) prior cultural resource commitments; (3) resource condition and trend, including existing and expected natural and human threats to cultural resources; (4) distribution of acres inventoried at the Class III level and inventory gaps; and (5) needs for site testing or special studies to improve evaluation confidence.

Factors of Analysis - Factors that address the relative importance and sensitivity of known and projected cultural resources, the feasibility of achieving particular management objectives, and the need for achieving the objectives.

Activity Plans/Plans of Operations - CRMP data includes a summary of the manager's use allocations for all cultural resources known and projected to occur in the plan area and priorities by geographic location or resource class for developing specific protection or information-improvement projects.

Compliance/Monitoring - Information on changes in the condition of resources, emergence of unforeseen protection project needs, effectiveness of prior protection projects, continuing project maintenance, and requirements for change in project design or intensity.

Research - Special studies outside the scope of cultural resource project plans and directly related to management of cultural resources or of lands and resources in general.

Authorizations/Use - Current data relating to the administration of cultural resource use permits, recreational uses of cultural resources, formally approved nonimpacting private uses of cultural resources (e.g., special use permits for Native American ceremonies), and a running compilation of annual program statistics.

PALEONTOLOGY

Data Sets

Interpreted Information - An interpretation of the raw inventory data and evaluation of that data for management purposes, including prior paleontological resource commitments, threats to the resource, data gaps, and need for special studies, inventories, or other management projects, including protection.

Factors of Analysis - Information relating to management decisions for paleontological resources, including statutes, rarity and significance of fossils present, consultations with paleontological specialists, site potential, and resource demand.

Activity Plans - A list of activity plans, dates of approval/enactment, and results.
Projects/Developments--Site stabilization work, interpretive activities, and associated costs and schedules.

Monitoring/Compliance - Site or project monitoring, compliance with stipulations, reports of incidents of unauthorized collection or noncompliance, and site patrol schedules.

Research - List of Bureau or non-Bureau paleontological research projects, goals, and results, including reports completed and recommendations for future management.

Authorizations/Use - Permit locations; permittees; dates of activity; submittal of permit reports and compliance with permit stipulations; information on repository and curation agreements; expiration dates; and other items relating to the authorized collection of fossils for scientific, recreational, and commercial purposes, such as type, volume and value of fossils sold, and a running compilation of program statistics.

FORESTRY

Data Sets

Interpreted Information - Data used for operational and management direction, similar to that included in the current OI and TPCC.

Factors of Analysis - Data used as part of the planning process to aid in analysis and decisionmaking, partly overlapping with inventory and other sets but including such different data as demands, input from other entities, and social factors.

Activity Plans - All data relating to forest management plans.

Monitoring/Compliance - Data relating to all BLM monitoring work, such as that included in the reforestation data set Microstorms.

Research - All data for program-related research, whether conducted by BLM or another entity and for research conducted under the COPE and FIR agreements.

Authorizations/Use - All data relating to the selling and administering of timber and other forest products. This data is maintained on the Denver Service Center Aspen system.

FIRE MANAGEMENT

Data Sets

Environment - Weather and physical landbase data used to determine prescriptions for fire use and for resources needed to respond to incidents.

Data Subsets

Fuels
Topography
Weather
Air Quality
Valuation
Aesthetics
Legal Limits

Incident Action

Data Subsets

- Resource Arrival
- Response Action
- Support Action

Management Direction - Information from manuals, handbooks, federal and state laws, administrative policies, and fire management activity plans.

Data Subsets

- Directives
- Operational Plans
- Procedures
- Policies

Certification and Qualifications - Qualification or certification requirements, standards, and training for individuals, crews, and aircraft.

Data Subsets

- Standards
- Training
- Certification
- Qualification

Status - Mechanical, human, and support resources that may be used in the successful management of an incident, the phase of the incident, and the implications of other incidents as they relate to resource availability.

Data Subsets

- Resource Status
- Incident Status
- Situation Status

Detection - When and where an incident occurs and who reports it.

Data Subsets

- Recognition
- Identification

Notification

Mobilization - The decisionmaking factor as related to the need to commit resources to an incident.

Resource Ordering - Resources requested for and committed to an incident.

Data Subsets

Dispatch Report
Resource Order

Demobilization - Data on the return to pre-incident status of resources no longer needed for an incident.

Data Subsets

Surplus Resources
Demobilization Plan
Release

Documentation - Information from an incident that is recorded for further use in fire planning, prevention, trend analysis, and fiscal needs.

Data Subsets

Non Archived Information
Archived Information

Hazardous Materials

Data Sets

Interpreted Information - Information about the known hazardous materials sites on public lands.

Factors of Analysis - This section of the Supplementary Program Guidance in the Bureau Manual System has not yet been developed.

Activity Plans/Plans of Operations

Monitoring/Compliance - Data listing and tracking hazardous materials sites where long-term monitoring has been implemented.
Authorizations/Use

PHYSICAL FACILITIES

TRANSPORTATION

Roads, trails, bridges, and major culverts, airfields, and waterways.

Data Sets

Construction - Features and cost estimates for planned projects.

Inventory - Location, type, purpose, materials used, owner, and physical dimension data for a facility; information that does not normally change.

Maintenance - Deficiencies, dates and types of performed maintenance, annual maintenance costs, maintenance needed, inspections, and priority ranking; data that is routinely updated.

BUILDINGS

Offices, administrative buildings, visitor centers, warehouses, shops, housing, fire lookouts, and remote facilities.

Data Sets

Construction - Features and cost estimates for planned projects.

Inventory - Facility location, type, purpose, owner, and physical dimensions; structural and architectural information, such as type of construction and materials, special components, and hardware; mechanical and electrical information, such as type and size of heating and ventilating equipment and type and voltage of electrical service; and utilities and grounds information, such as type and size of water and sewer systems, parking area, landscaping, fencing, and other unique features.

Maintenance - Deficiencies, dates and types of performed maintenance, annual maintenance costs, maintenance needed, inspections, and priority ranking; data that is routinely updated.

RESOURCES

Data Set

Projects - Any proposed or developed physical facility, structure, developments, practices, treatments, or improvements used to aid in the management, rehabilitation, and protection of the public lands and waters. Examples of resource management facilities include, fences, water control devices, cattleguards, trails, and recreation sites

APPENDIX 2
ACCESSING THE DATA ELEMENT DICTIONARY, BULLETIN BOARD, AND OTHER SYSTEMS

Introduction

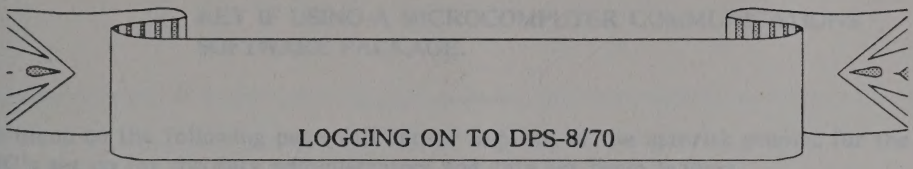
The menu access to the data element dictionary, bulletin board, and index of other menu systems has been developed to facilitate easy access to these programs and aid those involved in the Bureau's data standards efforts.

When you have successfully logged on to the Honeywell DPS 8000, you will be greeted by a main menu of things to choose from (provided your UMC is one with special ..init file). The information on these and other menus will help in your work dealing with data standardization. Please read the user's guide, "Data Element Dictionary," before trying to use the inquiry programs. Also take advantage of your Key Word Index to help you review the data element dictionary. The key word index can be obtained from your State Office Data Standards Administrator(SODA).

Each SODA and data set team leader should become familiar with the Data Element Dictionary and its contents to help them develop data elements, definitions, standards, and codes for their data set.

**** IMPORTANT ****

Before you try to use the computer system, you must have a working knowledge of the computer or terminal you are using and how the operating commands entered on that computer or terminal affect the honeywell mainframe computer. If you lack this knowledge, call your local information systems manager and get training in computer or terminal operation and keyboard commands.



LOGGING ON TO DPS-8/70

1. LOG ON TO THE HONEYWELL USING LOCAL INSTRUCTIONS.

2. AFTER CONNECTION, THE SYSTEM WILL RESPOND:

   RCF . . . DATE
   OR
   PROGRAM NAME - TRANSMIT

3. THE SYSTEM THEN RESPONDS:

   BLM COMPUTER CENTER - DATE/TIME - CHANNEL

   USER ID - ENTER USER ID AND TRANSMIT[1/]

   PASSWORD - ENTER PASSWORD AND TRANSMIT

   CHARGE CODE - ENTER CHARGE CODE AND TRANSMIT

   CHARGE PASSWORD -ENTER CHARGE PASSWORD AND TRANSMIT

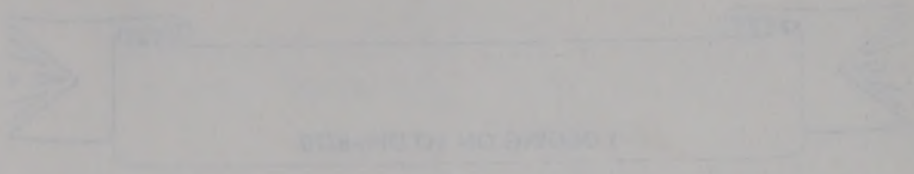
   TIME/SYSTEM MESSAGES
   NOOZ was updated 5/4/87 at 4:00 PM
   Type "INFO INDEX" to see headlines.

   ANY LOCAL MESSAGES

   *

THIS IS THE SYSTEM-LEVEL PROMPT - WHEN YOU SEE THIS YOU KNOW YOU ARE LOGGED ON THE HONEYWELL!

[1/]TRANSMIT = CARRIAGE RETURN OR XMIT. MAY REFER TO ANOTHER



KEY IF USING A MICROCOMPUTER COMMUNICATIONS SOFTWARE PACKAGE.

The menu on the following page will appear in place of the asterisk prompt for the UMC's set up for the data administrators and data set team leaders.

MAIN MENU

1 [D]ata Element Dictionary

2 [B]ulletin Board

3 [I]ndex of Other Menus and Systems

4 [A]ssistance

5 [E]xit -- Return to the System Level (*) asterisk Prompt.
You may then enter any valid command or program name.

[BYE] - Log off the Honeywell computer

To recall this menu, type EX MENU at the asterisk prompt

Enter Command:

NOTE -- THIS MENU WILL CHANGE FROM TIME TO TIME

Example

NOTE: Capitalized, boldfaced messages indicate computer generated information.

PROGRAM NAME - (Choice depends on terminal type
or being used and normal log on
RCF...Date procedure.)

In response, type in TSS followed by a carriage return (CR)[1/] or a carriage return. A carriage return is represented by (CR) throughout. Use the Program Name TSS or (CR) for all time-sharing operations (Examples of information or data to be entered by the user are capitalized and boldfaced followed by a carriage return.) For this example, type in

TSS (CR)

The computer responds with

BLM COMPUTER CENTER 08/13/86 AT 8.388 CHANNEL 2632.TS1

USER ID--

To this prompt, type in the assigned UMC or User ID, followed by a carriage return which appears similar to the following example:

A358 (CR)

The computer then asks for

PASSWORD--
XXXXXXXXXXXX

Type in the assigned password. For example,

TREES (CR)

The computer responds with

CHARGE CODE--
XXXXXXXXXXXXX

Type in the assigned charge code. For example,

HB35 (CR)

[1/]Carriage return (CR) and transmit mean the same. The one used depends on terminal type (i.e., TTY or VIP).

Next, the computer asks for a charge code password.

CHARGE CODE PASSWORD—
XXXXXXXXXXXXXX

Key in the assigned charge code password. For example,

BUSHES (CR)

To shorten the procedures for entering user identification information, users can combine the previous examples into one user identification string that can be typed at the computer prompt in a format like the following example:

*UMC$PASSWORD;CHARGE CODE/CHARGE CODE PASSWORD (CR)

*a999$xrew34;in99/stxiue

A999 is the user id or umc
XREW34 is the user id password
IN99 is the charge code
STXIUE is the charge code password

After the user identification has been correctly entered and the remote terminal connected to the DPS-8/70, the system displays a message about the Info Index followed by an asterisk (*) prompt. For example,

ALL USERS TYPE "INFO INDEX" TO SEE THE HEADLINES

*

At this point, type in INFO INDEX to see what messages are being sent through the computer system. This message file does not have to be checked every time one logs on the computer, but it should be reviewed at least once each day. Any change in log on procedure will be found in INFO INDEX.

INFO INDEX (CR)

The computer responds with some information similar to the following:

THIS INDEX TO NEWS CONTAINS INFORMATION REGARDING THE FOLLOWING TOPICS. TYPE "DISP XXX/XXX/XX, WHERE XX IS THE FILE SHOWN.

INFO RE: POWER OUTAGE TYPE INFO POWEROUT

INFO RE: CHANGES TO DPS-8/70 SPSS-X SOFTWARE TYPE INFO SPSS-X

INFO RE: ASPEN/2 BASIC RESTRICTED TO TS1 TYPE INFO TS1-CPE

After this asterisk prompt, type in the string naming the program to be used; or type the word BYE into the computer followed by a carriage return to disconnect the remote terminal or computer from the mainframe computer.

A. PRINT CONTROL

Commands to control printing come from three sources: the program, the communications software, or the printer itself. Commands from all sources may be needed in order to control the printing of your output.

1. PRINTER CONTROLS

Printers are controlled by program settings, switch settings or both. The instructions to use these controls are found in the printer User's Guide.

Example:

If users enter the ASPEN/2 command **CL = 132** (character per line = 132) and the printer is set for 80 characters, data will wrap around making the information hard to read.

In many cases you will have to set both the program and your printer.

2. VIP TERMINALS AND PRINTERS

Many offices use VIP (Honeywell CRTs) or TANDBURG terminals with a Mannesman Tally Printer.

The following commands are useful with these printers:

PLMS - TURNS ON VIP TERMINAL PRINTERS

PLMR - TURNS OFF VIP PRINTERS
PGON - SETS VIP TERMINALS TO AUTOMATIC PAGE STOP AT 24 LINES OF PRINT
PGOF - TURNS OFF PAGE STOP TURNED ON BY PGON
TAND - CHANGES PRINTER LINE LENGTH/SIZE FOR MANNESMAN TALLY PRINTERS

Complete documentation for the above commands may be obtained by entering DOCU at the * prompt followed by a four-character command, i.e., DOCU TAND.

See Attachment 1.

3. PC USING SOFTERM

a. first turn on printer.

b. To capture print press **Alt 1**, while in softerm, which will select SOFTERM's utility functions on a pop-up menu. The desired functions may be selected by pressing corresponding function keys.

Attachment 1. Documentation of Command Library.

DOCU TAND

TAND SOURCE - SOFTWARE/CMDLIB/SRC/TAND.G

CHANGES PRINTER LINELENGTH/SIZE. APPLICABLE ONLY TO TANDBERG TERMINALS WITH MANNESMAN TALLY PRINTERS ATTACHED. AVAILABLE LINELENGTH/SIZES ARE 132, 158, 218, and 264. THIS UTILITY REQUESTS DESIRED LINELENGTH AND SENDS THE APPROPRIATE CONTROL CHARACTERS TO SET THE PRINTER.

THE USER MAY ALSO USE A SHORT FORM OF THE UTILITY BY ENTERING THE DESIRED LINELENGTH/SIZE FOLLOWING THE COMMAND (IE. 'TAND 158'). USE OF THE SHORT FORM BYPASSES NORMAL COMMAND PROMPTS AND INFO MESSAGES WITH THE EXCEPTION OF ERROR MESSAGES.

ONCE THE PRINTER HAS BEEN SET, THE USER MUST USE 'PTON' OR 'PLMS' OR 'LPRT' COMMANDS TO DIRECT DATA TO THE PRINTER.

NOTE: USE OF THE TANDBERG 'PRINT' KEY PRIOR TO USE OF THIS UTILITY WILL CAUSE THE ERROR 'BAD PDENQ TST FROM D10CMD'. THIS PROBLEM WILL BE AVOIDED BY HITTING THE TANDBERG 'INIT' KEY PRIOR TO USE OF THE 'TAND' COMMAND.

IF YOU HAVE ANY PROBLEMS OR QUESTIONS, PLEASE CONTACT THE DENVER SERVICE CENTER, DPS8 SOFTWARE SECTION, FTS 776-6515 or Commercial (303)236-6516.

NOTE -- If you are having problems with your particular computer/printer configuration, please call your computer specialist in your state or district office before calling the Service Center. Configurations are, often times, peculiar to individual offices and Service Center specialists may not be able to help you. Your local computer specialist can help you better through the configuration process.

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